



Montana Department of
ENVIRONMENTAL QUALITY

MAILED
1-25-05 Jh

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

January 24, 2005

Mr. William Spoja
Sanitation Inc.
P.O. Box 882
Lewistown, MT 59457-0882

RE: Groundwater Monitoring Report, Sanitation Inc. Landfill, License Number 291

Dear Bill:

The Solid Waste Program received the October Groundwater Monitoring Report on January 19, 2005. It was assigned to Mary Louise Hendrickson for review. She has replaced Ms. Potts as staff hydrogeologist. I anticipate that you will receive a response from Ms. Hendrickson within 90 days.

If you have any questions on the review status or the results, please contact Ms. Hendrickson directly at 406-444-1808, or by email at mhendrickson@mt.gov. If you have any other issues or questions, please contact me at 406-444-5345, or at rithompson@mt.gov.

Sincerely

Rick Thompson, Supervisor
Waste Management Section
Waste and Underground Tank Management Bureau

MAILED



November 4, 2015

MAILED
#8 11/5/15

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: CLOSED SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291
JUNE 2015 GROUNDWATER MONITORING REPORT**

Dear Mr. Spoja:

The June, 2015 Groundwater Monitoring Report for the closed Sanitation, Inc. Class II Landfill has been reviewed and meets the requirements of the Administrative Rules of Montana Title 17, Chapter 50, Subchapter 13.

The facility remains in annual detection monitoring at this time, if you have any questions please contact me.

Sincerely,

John Collins
Hydrogeologist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: jcollins3@mt.gov

cc: Mr. Barry Damschen, Barry Damschen Consulting, 5531 York Rd, Helena, MT 59602
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

Correspondence Slip

Originator: JL

Date Requested: 11-3-15

Date Needed By: 11-4-15

REVIEW
ROUTING

Name

Andrea

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Initial/Date

AS 11/4/15
IN THE FIELD
RT 11-5-15

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Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

Fax to addressee at:

Proof Path: G:\WUT\ Sw3 | EW | Responses | Response 6

Mail copy of enclosures to CC's? Y ☒

Special Instructions:

Rick instructed me to have this routed directly to him, since there are no issues or violations.

Copies of enclosures for file needed? Y ☒

Copy of letter for file needed? ☒ N

Email copies sent? Y N

EMAIL copy sent to Project Originator? Y N



Montana Department of
ENVIRONMENTAL QUALITY

MAILED

1-5-12 *gh*

Brian Schweitzer, Governor
Richard H. Oppen, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

January 5, 2012

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: CLOSED SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291
JULY 2011 GROUNDWATER SAMPLING REPORT**

Dear Mr. Spoja:

The Solid Waste Program (SWP) has reviewed the July 2011 Groundwater Sampling Report for the Sanitation, Inc. Class II Landfill in Lewistown, Montana. The groundwater monitoring report meets the requirements of the Administrative Rules of Montana Title 17, Chapter 50, Subchapter 13. The SWP provides the following comments for your consideration:

- The results of a matrix spike and matrix spike duplicate analysis for Sulfate performed on sample SIMW-2 were below control limits. The results of Sulfate analyses from this sampling event may be biased low.

The facility remains in annual detection monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Mr. Barry Damschen, Barry Damschen Consulting, 5531 York Rd, Helena, MT 59602
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

File: Closed\Fergus Co.\Sanitation, Inc. Class II Landfill\License #291\Groundwater Monitoring

Correspondence Slip

Requested: 1/3/12

Originator: MVO

Date Needed By: 1/5/12

REVIEW
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Jh 1-3-12

Mary H

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Mail original via:

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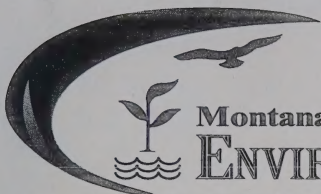
Mail copy of enclosures to CC's? Y ☒ N

Copies of enclosures for file needed? Y ☒ N

Copy of letter for file needed? ☒ Y N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y N



Montana Department of
ENVIRONMENTAL QUALITY

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MAILED
2-15-11 *jh*

Brian Schweitzer, Governor
Richard H. Opper, Director

February 15, 2011

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

RE: **CLOSED SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291**
JUNE 2010 GROUNDWATER SAMPLING REPORT

Dear Mr. Spoja:

The Solid Waste Program (SWP) has reviewed the June 2010 Groundwater Sampling Report for the Sanitation, Inc. Class II Landfill in Lewistown, Montana. The groundwater monitoring report meets the requirements of the Administrative Rules of Montana Title 17, Chapter 50, Subchapter 13. The SWP provides the following comments for your consideration:

- The laboratory pH measurements were conducted eight days after sampling and six days after the laboratory received the samples. The recommended holding time for pH samples is “Analyze Immediately” and general practice is to conduct pH analyses within 24 hours of sample receipt. Please ensure the laboratory conducts pH analyses as soon as possible after receiving the samples in future sampling events.

The facility remains in annual detection monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Mr. Barry Damschen, Barry Damschen Consulting, P.O. Box 7599, Helena, MT 59604
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

File: Closed\Fergus Co\Sanitation, Inc. Class II Landfill\License #291\Groundwater Monitoring
Path: G:\WUTSWS\GWater\Responses\Fergus Co\2010-06_sanitation_inc_GW.docx

Correspondence Slip

Originator: MVO

Requested: 2/12/11

Date Needed By: 2/14/11

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Mail copy of enclosures
to CC's? Y ☒ N

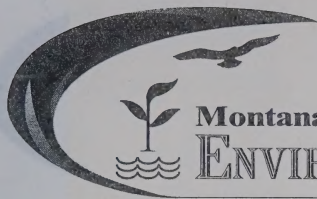
Special Instructions:

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y N



Montana Department of
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Brian Schweitzer, Governor
Richard H. Opper, Director

MAILED
11-23-09

November 23, 2009

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

RE: **CLOSED SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291**
VIOLATION: FAILURE TO SUBMIT RESULTS OF JUNE 2009 GROUNDWATER SAMPLING

Dear Mr. Spoja:

The Department has not received the results and analysis of the June 2009 groundwater sampling event for the closed Sanitation, Inc. Class II Landfill in Fergus County, Montana. According to our records this sampling event was scheduled to occur on June 22, 2009. Administrative Rule of Montana (ARM) 17.50.708(15) requires that the owner or operator submit the sampling results and water elevations to the Department within 90 days after sampling. The results of the sampling scheduled to be conducted on June 22, 2009 were due to the Department by September 20, 2009. As of the date of this letter these results are 64 days late.

Failure to submit the groundwater sampling results by the required deadline is a minor violation of ARM 17.50.708(15). If not rectified, minor violations may become major violations. Major violations require immediate correction or the Department may take further action. **To return the facility to compliance, please submit the June 2009 groundwater sampling results to the Department immediately.**

If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

File: Closed\Fergus Co.\Sanitation, Inc. Class II Landfill\License #291\Ground Water Monitoring
Path: G:\WUTSWS\GWater\Responses\Fergus Co\2008-11_sanitation_inc_lateGW.doc
cc: Mr. Barry Damschen, Barry Damschen Consulting, 5531 York Road, Helena, MT 59602
Mr. Tim Stepp, MT DEQ, WUTMB, SWS
Mr. John Arrigo, MT DEQ, Enforcement
Mr. Norm Mullen, MT DEQ, Legal

Correspondence Slip

Project ID: _____

Requested: _____

11/19/09

Needed By: _____

11/23/09

Originator: _____

MVD

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REVIEW
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Name

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Initial/Date

Admin

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JH 11-19

Mary H

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Rick

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RC 11-23-09

Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

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See letter

Mail copy of enclosures
to CC's? Y ☒ N

Special Instructions:

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y ☐ N



Montana Department of
ENVIRONMENTAL QUALITY

MAILED

12-15-08 *gh*

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

December 11, 2008

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

RE: **SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291**
UPDATED GROUNDWATER SAMPLING AND ANALYSIS PLAN, NOVEMBER 2007
JUNE 2008 GROUNDWATER SAMPLING REPORT

Dear Mr. Spoja:

The Department has reviewed the updated Groundwater Sampling and Analysis Plan (SAP) dated November 2007 and the June 2008 Groundwater Sampling Report for the Sanitation, Inc. Class II Landfill in Lewistown, Fergus County, MT. Thank you for your patience regarding the Department's response to your submittals.

In regards to the review of the SAP, please make the changes noted below and submit either a complete revised document or changed pages to the Department by February 9, 2009:

- Please include the permitted boundary of the facility on Figure 2-1.

The June 2008 Groundwater Sampling Report meets the requirements of the Administrative Rules of Montana (ARM) 17.50.708 with the following exceptions:

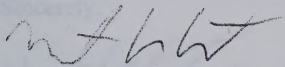
- COD and Nickel were detected in one or more compliance wells but statistical analyses and historical trend plots were not prepared for these parameters. In future reports, please prepare statistical analyses and historical trend plots for all parameters detected in compliance wells, including pH
- The statistical analyses applied do not meet the requirements of ARM 17.50.708 (12). In future reports, a more rigorous statistical analysis should be performed that meets the standards set forth in ARM 17.50.708 (12).
- The field forms do not describe field procedures sufficiently to verify good sampling practices are being followed.
 - The total depth of the well needs to be recorded. This can be taken from well records but should be field verified periodically to check for silt accumulation in the wells.
 - The well volume needs to be calculated and recorded. Because standard sampling procedures require that field parameters be measured after each well volume (at minimum), and that at least 3 well volumes will be purged (unless well is purged dry), calculating the well volume is critical for proper sampling.

- The well purging rate needs to be recorded. This can be estimated by recording the time purging started and the time of each field parameter reading.
- Field readings of pH are inaccurate. Field readings should be compared to previous field and lab measurements at each well and if different, the meter should be recalibrated. If the field meter continues to produce anomalous readings following proper calibration, a different meter should be used in future sampling events.

Please take care to follow proper sampling protocol for future sampling events. Good sampling practices are needed to produce valid, legally defensible chemical analyses. The references cited in the SAP provide valuable information on proper purging, sampling, and sample handling techniques and should be reviewed. Another excellent reference is "Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers" (EPA 542-S-02-001 May 2002), which is available online at: http://www.epa.gov/tio/tsp/download/gw_sampling_guide.pdf. As noted in these documents the use of bailers for monitoring well purging and sampling is discouraged unless absolutely necessary (less than 5 feet of water in the well and recovery rate less than 0.05 gpm). An alternate sampling method should be for future sampling events and if the use of bailers is determined to be necessary, double check valve bailers should be used to provide the best possible analytical results.

The Department notes the statistically significant increasing trends in SC at all wells and of Sulfate at SIMW-4, the near significant increasing trends of Chloride and Zinc in SIMW-4, and the detection of Nickel in SIMW-4 which was not addressed in the report. The Department also notes that the water quality sample from the detention pond suggested in Sanitation, Inc.'s June 2007 Groundwater Sampling Report and agreed to by the Department in a letter dated October 30, 2007 has not yet been collected. This sample should be collected at the earliest opportunity to help determine what, if any, effect the detention pond is having on groundwater chemistry in SIMW-4. **Please collect this sample no later than the Spring 2009 sampling event.** The facility remains in annual detection monitoring at this time, however, recent trends should be closely monitored. If at any time you have any questions, comments, or concerns, please do not hesitate to contact me directly at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Program.

Sincerely,



Martin Van Oort
Environmental Science Specialist
Solid Waste Program

Phone: 406-444-2802, Fax: 406-444-1374

E-mail: mvanoort@mt.gov

File: Fergus Co.\Sanitation, Inc. Landfill\License#291\Ground Water Monitoring

Path: G:\WUT\SW\GWater\Responses\Fergus Co\2008-06_sanitation_inc_review.doc

cc: Mr. Barry Damschen, Barry Damschen Consulting, 5531 York Road, Helena, MT 59602

Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

Correspondence Slip

Project ID: _____

Requested: _____

12/10/08

Needed By: _____

12/15/08

Originator: _____

MVP

Org(s)/Mail Code: _____

REVIEW
ROUTING

Name

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Initial/Date

Admin

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AK 12-10

Mary H

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AK 12-12

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Rick

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RT 12-12-08

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Fax to addressee at: _____

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Special Instructions:

Mail copy of enclosures to CC's? Y ☒ N

Copies of enclosures for file needed? Y ☒ N

Copy of letter for file needed? ☒ Y N



Montana Department of
ENVIRONMENTAL QUALITY

MAILED
1-2-10 Jh

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

June 2, 2010

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: CLOSED SANITATION, INC. LANDFILL – FERGUS COUNTY – LICENSE #291
JUNE 2009 GROUNDWATER SAMPLING REPORT**

Dear Mr. Spoja:

The Department has reviewed the June 2009 Groundwater Sampling Report for the Sanitation, Inc. Class II Landfill in Lewistown, Montana. The report meets the requirements of the Administrative Rules of Montana. The Department provides the following comment for your consideration:

- The Department agrees with the statistical outlier selection in the report with the following exceptions:
 - The Chemical Oxygen Demand value from SIMW-3 on 11/2/2005 and the Nitrate + Nitrite value from SIMW-4 on 6/9/2008 should not be considered outliers.
 - The Iron value from SIMW-3 on 6/15/1999 should be considered an outlier.

The facility remains in annual detection monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Mr. Barry Damschen, Barry Damschen Consulting, P.O. Box 51210, Billings, MT 59105
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

File: Closed\Fergus Co\Sanitation, Inc. Class II Landfill\License #291\Groundwater Monitoring
Path: G:\WUTSWS\GWater\Responses\Fergus Co\2009-06_sanitation_inc_GW.doc

Correspondence Slip**Project ID:** _____**Requested:** 6/1/10**Needed By:** 6/3/10**Originator:** MVO**Org(s)/Mail Code:** _____REVIEW
ROUTING**Name****Task****Initial/Date**AdminProofth 6-1-10MaryltReviewth 6-1DarrellReviewth 6-1RockReviewth 6-2-200**Mail original via:**☒ Regular ☐ Certified ☐ Registered ☐ FedEx**Fax to addressee at:****Proof Path:** G:\WUT\See letter**Mail copy of enclosures
to CC's?** Y ☒ N**Special Instructions:****Copies of enclosures
for file needed?** Y ☒ N**Copy of letter for file
needed?** ☒ Y ☐ N



Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

May 15, 2006

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: SANITATION INC. LANDFILL - LICENSE #291
REVIEW OF 2005 GROUNDWATER MONITORING REPORT**

Dear Mr. Spoja:

The Department has reviewed the 2005 groundwater monitoring results for the Sanitation, Inc. landfill in Lewistown. Thank you for your patience regarding the Department's review of these documents. The reports meet the requirements of the Administrative Rules of Montana (ARM) 17.50.708.

In accordance with the November 4, 2005 negotiated agreement between Sanitation, Inc. and the Department, the facility will be required to sample wells SIMW-2, -3, and -4 on an annual basis (every June). In addition, during the sampling event, static water levels in well SIMW-1 and piezometer wells SIP-1, and SIP-2 should be measured and these piezometric elevations used to construct the groundwater contour map. Finally, a revised groundwater monitoring sampling and analysis plan (SAP) must be submitted to reflect these changes in the sampling scheme at the facility. The revised SAP must be submitted within 60-days of the date of this letter.

If you have any questions regarding this review or issues related to the groundwater monitoring requirements, please feel free to contact me directly at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Respectfully,

Mary Louise Hendrickson
Environmental Science Specialist
Solid Waste Regulatory Program
Phone: 406-444-1808; Fax: 406-444-1374
Email: mhendrickson@mt.gov

File: Fergus County County\Sanitation, Inc. Landfill\License#291\Groundwater Monitoring and Reports

Path: G:\WUTSWS\GWater\Responses\Fergus Co\SanInc-GW-051506.doc

cc: Mr. Barry Damschen, Barry Damschen Consulting, LLC, 5531 York Road, Helena, MT 59602

Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Avenue, Helena, MT 59601

Correspondence Slip

Requested:

5-12-06

Needed By:

5-15-06

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mla

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Send original letter: ☒ Regular ☐ Certified ☐ Registered ☐ FedEx

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Special Instructions:

pls make extra copy for met

Thank!

Enclosures & cc: info will be followed exactly "as is" on correspondence. Enclosures will not go with copies, unless otherwise specified.



Montana Department of
ENVIRONMENTAL QUALITY

MAILED

10-30-07 JH

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

October 30, 2007

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: SANITATION INC. LANDFILL - LICENSE #291
JUNE 2007 GROUNDWATER MONITORING REPORT REVIEW**

Dear Mr. Spoja:

The Department has reviewed the Sanitation, Inc. Landfill's June 2007 groundwater monitoring report. The report meets the requirements of the Administrative Rules of Montana (ARM) 17.50.708.

The Department notes the VOC's detected in well SIMW-4 and agrees that the detention pond may be influencing the water quality in the monitoring well. To that end, the Department agrees with the suggestion to collect an additional water quality sample from the detention pond during the next groundwater monitoring event, when there is water present in the pond, to evaluate whether or not the pond has impacted the monitoring well.

If you have any questions regarding this review, please feel free to contact me directly at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Respectfully,

Mary Louise Hendrickson
Environmental Science Specialist
Solid Waste Regulatory Program
Phone: 406-444-1808; Fax: 406-444-1374
E-mail: mhendrickson@mt.gov

File: **Fergus County County\Sanitation, Inc. Landfill\License#291\Groundwater Monitoring and Reports**

Path: G:\WUT\SW\GWater\Responses\Fergus Co\SanInc-0607review.doc

cc: Mr. Barry Damschen, Barry Damschen Consulting, LLC, 5531 York Road, Helena, MT 59602

Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Avenue, Helena, MT 59601

Correspondence Slip

Project ID: _____

Requested: _____

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Needed By: _____

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Originator: _____

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was 10/29

Rick

RT 10-29-01

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Special Instructions:

Mail copy of enclosures
to CC's? Y N

Copies of enclosures
for file needed? Y N

Copy of letter for file
needed? Y N

Y



Montana Department of
ENVIRONMENTAL QUALITY

MAILED
12-18-06

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

December 18, 2006

Mr. William Spoja
SANITATION INC.
P.O. Box 882
Lewistown, MT 59457-0882

**RE: SANITATION INC. LANDFILL - LICENSE #291
JUNE 2006 GROUNDWATER MONITORING REPORT REVIEW**

Dear Mr. Spoja:

The Department has reviewed the Sanitation, Inc. Landfill's June 2006 groundwater monitoring report. The report meets the requirements of the Administrative Rules of Montana (ARM) 17.50.708.

The Department notes that water level probe problems precluded the collection of static water levels from the wells as required. In accordance with the November 4, 2005 negotiated agreement between Sanitation, Inc. and the Department, please ensure that static water levels are collected during the next annual sampling event from all wells, including the piezometer wells SIP-1 and SIP-2.

If you have any questions regarding this review or issues related to the groundwater monitoring requirements, please feel free to contact me directly at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Respectfully,

Mary Louise Hendrickson
Environmental Science Specialist
Solid Waste Regulatory Program
Phone: 406-444-1808; Fax: 406-444-1374
Email: mhendrickson@mt.gov

File: Fergus County County\Sanitation, Inc. Landfill\License#291\Groundwater Monitoring and Reports
Path: G:\WUT\SW\GWater\Responses\Fergus Co\SanInc-0606review.doc
cc: Mr. Barry Damschen, Barry Damschen Consulting, LLC, 5531 York Road, Helena, MT 59602
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Avenue, Helena, MT 59601

Correspondence Slip

Project ID: _____

Requested: 12-18-06Needed By: 12-18-06Originator: mlh

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REVIEW
ROUTING

Name

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Initial/Date

PatRickJamesReviewPRC 12/18RT 12-18-2006PR 12-181

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Special Instructions:

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to CC's? Y NCopies of enclosures
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Closed

County FergusFacility & # Master M #302

Closure

Landfarm

Finan Assur

Liner

GW Corr Meas

Methane

GW Monitoring

O & M

GW Reports

Run-on

Inspections

Other: _____

Stepp, Tim

COPY

Tim Stepp 3/17/08

From: Stepp, Tim
Sent: Monday, March 17, 2008 2:19 PM
To: Oppen, Richard
Cc: Thompson, Ricknold; Thamke, Ed; North, John
Subject: RE: Sanitation, Inc. bill with Energy Labs
Attachments: Sanitation, Inc. payments to Energy Labs; Sanitation Inc - Trustee resignation and new Trust Agreement/Post-closure Plan/Deed notations

Richard,

I am sorry for this unexpected interruption of your busy schedule.

Ever since our settlement agreement with Sanitation Inc was reached in January 2006, we have been working with Mr. Spoja for more than 2 years to get the materials required from him in order to close the enforcement action (updates to Post-Closure Plan, Groundwater & Methane Monitoring Plans, new Trust Agreement, & deed notations). After Mr. Spoja paid into the trust fund (according to the ENF action taken), we approved the landfill closure work and have already paid all previous outstanding bills from the trust in good faith hoping to encourage his cooperation. Yet we were forced to write one demand letter already---sent by Keith Christy on December 5, 2006.

I agreed to pay this latest Energy Labs bill only after Bill said that he would finally deliver on the remaining submittals sometime in mid February. Although I have waited to send payment until he delivers on his promise, I did not condition payment on his action because we (usually) do not make bargains. I simply said that I would soon pay the bill from the fund, but offered no date. In fact, my official position as stated in my last email (attached) made no commitment to pay anything until his trustee was replaced (trustee resigned due to long history of delayed fee payments to bank).

Please let me add that I have made every attempt to avoid re-elevation of this case, because I had believed that resolution with Mr. Spoja was otherwise possible, and that we were close to getting there without consuming more valuable time. I have tried to directly engage with Mr. Spoja using a softer compliance assistance approach based on mediated cooperation, and he has responded albeit slowly. His latest email (also attached) again claims that the materials will arrive soon---his engineering consultant told me this morning that everything but the trust and deed submittals will arrive by Friday. Maybe I was right and he is starting to cooperate again? John North said that he has intended to call Mr. Spoja's attorney regarding the trust agreement and deed notations.

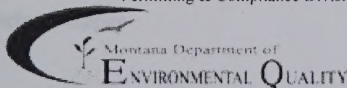
Given Mr. Spoja's recent activities and further delays, however, Rick has decided not to pay any bills until resolution is reached and has requested that Frank Gessaman and John North now work with us to demand resolution in writing as before. I sincerely hope that Bill beats us to the punch by coming through as needed.

Thanks.

Tim

TIM STEPP

Environmental Engineer - Solid Waste Program
 Waste & Underground Tank Management Bureau
 Permitting & Compliance Division



Lee Metcalf Building
 1520 East Sixth Ave

Phone 406-444-4725
 Fax 406-444-1374

3/17/2008

3/17/2008

P.O. Box 200901
Helena, MT 59620-0901

email: tstepp@mt.gov

From: Oppen, Richard
Sent: Sunday, March 16, 2008 11:51 AM
To: Stepp, Tim
Subject: FW: Sanitation, Inc. bill with Eenergy Labs

Tim,

Can you fill me in on this issue? Just drop me an email to let me know who's right on this one. Thanks. Here's a copy of the note I sent Mr. Spoja.

Richard

Bill,

I haven't had a chance to catch up with Tim Stepp yet on the past due bill issue. Rarely is the department blameless when we have an issue with someone we regulate. But rarely are we totally at fault. There are always two sides to every issue, and I need to hear ours, if there is one. And if we are in the wrong, I will make sure we fix it.

Richard

From: William Spoja [<mailto:thumper@tein.net>]
Sent: Thursday, March 06, 2008 5:14 PM
To: Stepp, Tim
Cc: Oppen, Richard
Subject: Sanitation, Inc. bill with Eenergy Labs

Tim:

I am angry.

A month ago you were supposed to have gotten the Energy Labs bill for the work done in July of 2007 paid immediately from the trust in accordance with the settlement agreement we have with DEQ. You have not done that and I have another copy of that bill with a big red "past due" stamp on it and a personal handwritten note saying, "Bill- We have still not received payment. Please contact Darcy 406 869 6259."

Frankly, I am not sure what I should do now. When I have a clear promise that you are going to get this bill paid and it does not happen, I don't know what next.

I am sending a copy of this to Mr. Oppen; perhaps he can help you get it done.

Bill Spoja

c: Richard Oppen

3/17/2008

3/17/2008

COPY

Stepp, Tim

From: William Spoja [thumper@tein.net]
Sent: Thursday, March 13, 2008 11:58 AM
To: Stepp, Tim
Subject: Sanitation, Inc. payments to Energy Labs

I was told today that you were not going to pay the Energy Lab bill until the new post closure plan was in place and the new trust agreement was in place. As you are aware, it is difficult to get things through the department in a timely manner so that concerns me because Energy Labs does not have to wait forever. To hold this payment to attempt to bludgeon me into something is not an appropriate governmental action..

I have the post closure plan on its way to Barry Damschen, but I am drawing to his attention that there is waste in the plan and I am trying to avoid that. The wasteful expenditures would equal a year of maintenance over the term of the post closure period. I would hope we can do better than that.

I have the new trust agreement in the Ugrin law firm's hands and I expect that it will be forwarded to the department shortly if it has not been sent by now.

Please take care of the payment to Energy Labs. I understand that Wells Fargo will honor your request if you will send it.

As you requested, the site contact for landfill trust fund management at First Interstate is:

Ken Feltner
First Interstate Bank
4000 E. 1st Street
P.O. Box 1000
Pawnee, MT 59101
(406) 834-4322

Ken Feltner
First Interstate Bank
4000 E. 1st Street
P.O. Box 1000
Pawnee, MT 59101
(406) 834-4322

Thanks for the history and please call me if you need further assistance on post closure costs and fund management.

Tim Stepp

TIM STEPP

Environmental Policy & Land Use Program
Chief of Land Management & Management Services
Planning & Consulting Division

Environmental Quality



Environmental Policy & Land Use Program
Chief of Land Management & Management Services
Planning & Consulting Division

Phone: 406-834-4322
Fax: 406-834-4323
Email: tstepp@firstinterstate.com

COPY

Stepp, Tim

From: Stepp, Tim
Sent: Friday, January 18, 2008 12:58 PM
To: 'thumper@tein.net'
Cc: North, John; Thompson, Ricknold
Subject: Sanitation Inc - Trustee resignation and new Trust Agreement/Post-closure Plan/Deed notations
Attachments: SanIncPCTrustAgreement0407.doc

Bill,

Please find attached a copy of the Department's language for the post-closure trust agreement for Sanitation Inc. Any questions regarding the trust agreement, including the ultimate dispersal of potential funds remaining upon expiration of post closure care, should be directed to chief attorney John North (444-2018). He will also review the trust language upon submittal for final approval. Our dispersal of funds obviously depends upon re-assignment of the trustee and establishment of the new trust fund account.

Also as we discussed, landfill post closure care was initiated on May 22, 2006, when the modified closure construction plan was approved by the Department. Please submit a Post-Closure Care Plan as required with the deed notation documents.

John will be writing you regarding the issues that still require resolution according to the settlement agreement.

As you requested, the new contact for landfill trust fund management at First Interstate is:

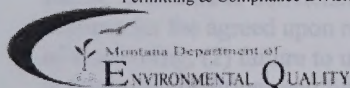
Kirk Fulford
 First Interstate Bank
 49573 US HWY 93
 P.O. Box 1299
 Polson, MT 59860
 (406) 883-8800

Thanks for the inquiry and please call me if you need further assistance on post closure care and fund management.

Tim Stepp

TIM STEPP

Environmental Engineer - Solid Waste Program
 Waste & Underground Tank Management Bureau
 Permitting & Compliance Division



Lee Metcalf Building
 1520 East Sixth Ave
 P.O. Box 200901
 Helena, MT 59620-0901

Phone 406-444-4725
 Fax 406-444-1374
 email: tstepp@mt.gov

3/17/2008



**Montana Department of
ENVIRONMENTAL QUALITY**

COPY

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

Legal Unit

Tel: (406) 444-1422

Fax: (406) 444-4386

December 5, 2006

Neil E. Ugrin, Esq.

Ugrin, Alexander, Zadick & Higgins, P.C.

#2 Railroad Square, Suite B

Great Falls, MT 59403

Re: *Sanitation Inc. Class II Landfill Lic. #291*

Dear Neil:

This is to follow our telephone conversation of several weeks ago regarding responsibility of payments for debts incurred by Sanitation Inc. for the Class II Landfill presently in closure status.

I note initially that on May 22, 2006, the Department of Environmental Quality (Department) mailed to William Spoja and Sanitation Inc. a notice of final facility closure and requirements for post-closure status. The notice informed Mr. Spoja that the Department approved the final cap construction for the western expansion area, that the Department had backdated interim closure status to November 19, 2003, and also had approved the transfer of closure funds held in trust to the post-closure trust account. See copy of enclosed notice letter.

However, the notice also informed Mr. Spoja that three deficiencies remained before the Department could approve final facility closure and place the facility into post-closure status. Those three deficiencies were: (1) failure to update the site monitoring plans to account for the agreed upon reduction in the number of monitoring wells and frequency of monitoring; (2) failure to update Sanitation Inc.'s post-closure plan to summarize current site conditions and future post-closure activities; and (3) failure to adjust post-closure financial assurance for cost increases due to annual inflation.

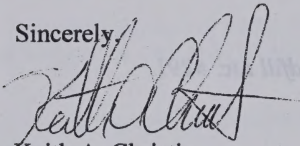
To date, Sanitation Inc. remains in default of those three requirements necessary for the Department to place Sanitation Inc. into post-closure status. Pursuant to the terms of the settlement agreement reached last January 26, 2006, between the Department, Sanitation Inc., and the Spojas, Sanitation Inc. agreed to file its post-closure plan by December 31,

2005; agreed to execute a new trust agreement for the benefit of the Department at such times as requested by the Department; and agreed generally to remain in compliance of the trust agreement requirements and Department regulations for closure and post-closure obligations.

At this time, the Department considers that Sanitation Inc. remains responsible for all fees incurred by third-party contractors until such time as the Department places Sanitation Inc. into post-closure status and determines further that Sanitation Inc. no longer exists as a solvent corporate entity in the state of Montana. As such, at this time the Department must refuse your client's request for reimbursement directly to William Spoja for expenses paid to third-party contractors or to arrange payments through the trustee of expenses incurred by Sanitation Inc. while in closure status.

I also enclose with this letter a copy of the new trust agreement which the Department had requested agreement from Sanitation Inc. by separate cover earlier this year.

Sincerely,



Keith A. Christie
Staff Attorney
Department of Environmental Quality

Encl

cc: WUTMB/SW (w/encl)
ENFD # 739 (w/encl)

RECEIVED

DEC 05 2006

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

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— AND —

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Prepared By:
Montana Department of Environmental Quality
Solid Waste Section

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December 2, 2010

Internal Routing Slip

SW Section

Name		Initials
Joe Blaine		
Janet Handy (last)	1	JH
Mitzi Hansen		
Mary Hendrickson	3	MH
Renai Hill		
Bruce Meyer		
Darrell Stankey	2	DS
Tim Stepp		
Rick Thompson	4	RT
Martin Van Oort	5	MVO

Misc. / Notes

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1.0 INTRODUCTION

Groundwater and methane monitoring at the closed Mister M Landfill, License #302, was conducted in February, June, and October 2009 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the May 2009 Sampling and Analysis Plan for Methane and Groundwater (SAP) (MDEQ, 2009[2]). Additionally, two monitoring wells were installed and four monitoring wells abandoned in October 2010, according to the Scope of Work in DEQ Contract Number 510045 (MDEQ, 2010[2]). Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai Formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai Formation but most of the monitoring wells completed at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater and methane monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater and methane monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [3]; 2010[1]).

2.0 WELL INSTALLATION AND ABANDONMENT

In order to better define groundwater conditions and provide reliable point of compliance (POC) monitoring points, two new wells were installed at the facility in October 2010. The monitoring wells were drilled and completed according to the requirements in Administrative Rule of Montana (ARM) 17.50.1304. Also at this time, four wells determined to no longer be useful for monitoring were abandoned according to ARM 17.50.1312. The locations of the wells installed and abandoned in October 2010 are shown in Figure 3.

2.1 WELL DRILLING AND INSTALLATION

The two new monitoring wells, MW-11 and MW-12, were drilled and installed on October 12 through 14, 2010, by Central Drilling of Lewistown, Montana. The monitoring well logs and completion forms are included in Appendix A. Field notes are included in Appendix B.

MW-11 was located near the facility boundary south of the west detention pond to replace MW-10R, which had been damaged beyond repair in November 2009. Drilling was started on October 12, 2010, at 1230 and completed at 1345. The total depth of the boring at MW-11 was 80 feet below ground surface. The geology at this location consisted of mixed red and gray shale. Water was encountered at 75 feet below ground surface in a sandstone unit producing approximately 12 gallons per minute. The well screen was set from approximately 70 to 80 feet below ground surface and the well was completed with risers, surface casing, sand pack, and bentonite, on October 12, 2010, and grout on October 13, 2010. The surface pad and locking well cap were installed on October 14, 2010.

MW-12 was located near the facility boundary down gradient from the Office Well (MW-OW), to replace that well as the point of compliance well and define the extent of the contamination detected in MW-OW. Drilling was started on October 13, 2010, at 855 and completed at 1205. The total depth of the boring at MW-11 was 105 feet below ground surface. The geology at this location consisted of mixed red and gray shale and sandy shale with some thin sandstone beds.

Water was first encountered at 44 feet below ground surface in a minor sandstone unit producing approximately 1-2 gallons per minute. Drilling was continued to attempt to penetrate a more productive water bearing zone. An additional 2 gallons per minute of water was encountered in hard fractured shale at approximately 100 feet below ground surface. The well screen was set from approximately 95 to 105 feet below ground surface and the well was completed with risers, surface casing, sand pack, bentonite, and grout on October 13, 2010. The surface pad and locking well cap were installed on October 14, 2010.

2.2 WELL DEVELOPMENT

The new monitoring wells were developed on October 14 and 15, 2010 by MDEQ Solid Waste Section personnel. The well development forms are included in Appendix A. Field notes are included in Appendix B. The wells were developed using a 12 volt submersible pump. Each well was purged at the maximum possible pumping rate and periodically surged by raising and lowering the pump. Specific Conductance and pH were measured periodically throughout development using a Hanna model 991-300 water quality meter. Turbidity of the produced water was visually inspected throughout development. Development was continued at each well until field parameter readings were stable and minimal turbidity was observed following surging. A total of approximately 350 gallons was pumped from MW-11 at an average of 2 gallons per minute on October 14, 2010. A total of approximately 230 gallons was pumped from MW-12 at an average of 1.4 gallons per minute on October 14 and 15, 2010.

2.3 WELL ABANDONMENT

Wells MW-4, MW-7R, MW-8, and MW-10R were abandoned on October 13 and 14, 2010 by Central Drilling. Field notes are included in Appendix B. The wells were abandoned by removing the surface casings, pulling as much of the interior casings as possible, and filling the wells with bentonite grout.

3.0 FIELD PROCEDURES

MDEQ Solid Waste Section personnel conducted monitoring activities on February 26, June 21, and October 25, 26 and 27, 2010 including monitoring well inspections, methane monitoring, static water level (SWL) measurements, and groundwater sample collection as part of the assessment monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point on each date are shown in Figure 4. Copies of the field notes for all monitoring events are included in Appendix B. All field activities described in this report were conducted in accordance with the approved May 2009 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

3.1 WELL INSPECTIONS

The monitoring wells currently in use were inspected on February 26, June 21, and October 25, 2010. MW-OW does not have an external casing and the new locking cap installed in April 2009 is already showing significant weather wear. In February 2010 it was noted that well MW-10R had been damaged beyond repair. As described in Section 2.3, this well was abandoned in October 2010.

3.2 METHANE MONITORING

Methane monitoring was conducted on February 26, 2010, at wells MW-1, MW-2, MW-5M, MW-6M, and the north and south vents of the passive methane trench, on June 21, 2010 at wells MW-2, MW-5M, MW-6M, and the north vent of the passive methane trench, and on October 25, 2010 at wells MW-1, MW-2, MW-5M, MW-6M, and the north and south vents of the passive methane trench. All monitoring was conducted using a GFG model G450 portable gas meter. The gas meter was calibrated to the reference standard prior to leaving the office for each monitoring event. At the wells, monitoring was conducted by attaching the gas meter input tubing directly to the port on the cap. At the methane vents, monitoring was conducted by inserting the gas meter input tubing as far as possible into the vent. At all locations the highest

reading during a two to three minute purge was recorded. Methane monitoring was not conducted in the office due to lack of access during all events. Monitoring was not conducted at well MW-1 during the June monitoring event due to deep water standing around the well, or at the south methane vent due to muddy conditions.

3.3 WATER LEVEL MEASUREMENTS

Static water levels were measured on February 26, 2010, in wells MW-4, MW-5, MW-6, MW-7R, MW-8, MW-9R, and MW-OW, on June 21, 2010, in wells MW-5, MW-6, MW-7R, MW-8, MW-9R, and MW-OW, and on October 25, 2010, in wells MW-5, MW-6, MW-9R, MW-11, MW-12, and MW-OW using an electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded.

3.4 GROUNDWATER SAMPLING

Groundwater samples were collected October 25, 26, and 27, 2010, from wells MW-9R, MW-11, MW-12, and MW-OW. No samples were collected from well MW-5 or MW-HW during this sampling event. A field duplicate was collected from well MW-12. No equipment blank was collected because all wells were sampled with disposable bailers. No field blank was collected during the October 2010 sampling event. At each well that was sampled, samples were collected for all of the parameters listed in the SAP with the exception of Chemical Oxygen Demand, Cyanide, and Mercury. These parameters were excluded to reduce analytical costs following review of the historical data.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. Copies of the Monitoring Well Purging and Sampling Forms for each well are included in Appendix B. All of the wells were purged and sampled using disposable bailers. Field water quality measurements were made using a Hanna model 991-300 water quality meter, which was calibrated to the pH and conductivity reference solutions on October 8, 2010. Dissolved oxygen and oxidation-reduction potential (ORP) measurements were not taken because the field meter did not have sensors for these parameters. Well MW-9R was purged dry in the afternoon of October 25, 2010, and allowed to recover overnight before sampling. Purging

at well MW-12 was started on October 26, 2010, suspended due to darkness, and completed on October 27, 2010.

After collection, the samples were labeled as described in the SAP and were stored in a laboratory supplied cooler. Due to the cold ambient temperatures and to prevent freezing the samples, no ice was used. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on October 27, 2010.

4.0 MONITORING RESULTS

4.1 METHANE MONITORING RESULTS

No methane was detected in any of the methane monitoring wells except MW-5M. Methane was detected in well MW-5M during all monitoring events and exceeded the LEL during the February 2010 event. Low oxygen levels were observed in well MW-5M during all events and prevented accurate measurement of methane concentrations during the June 2010 and October 2010 monitoring events. The methane sensor of the GFG meter does not function at oxygen concentrations less than ten percent. Methane was detected in the north and south gas vents in February 2010 at concentrations of 83 and 53.5 percent of the LEL, and in the north vent in June 2010 at 6 percent of the LEL. No carbon monoxide or hydrogen sulfide was detected at any location. Copies of the completed Methane Monitoring Forms are included in Appendix B.

4.2 GROUNDWATER LEVELS AND FLOW

Table 1 contains the measured total depth, depth to water, and static water levels measured in 2010. The groundwater levels measured during February 2010 were similar to those measured in October 2009. The water levels in June 2010 were 7.47 to 21.28 feet higher than the February measurements due to an extraordinarily wet spring. The October 2010 water levels declined 3.41 to 19.29 feet from the June levels, but remained above typical fall/winter levels for the facility. Figure 5 displays the 2010 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Water Level Measurement Forms were completed during each event and copies are included in Appendix B. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix C.

4.3 DATA VALIDATION

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 5.6°C. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent difference for all field and laboratory duplicates were all within control limits. The matrix spike and matrix spike duplicate analyses for Sulfate and the matrix spike duplicate analysis for Chloride were outside of control limits, indicating that Sulfate and Chloride results may be biased high. The matrix spike analyses were performed on sample MrM-MW-12. The laboratory fortified blank and calibration verification standards for Sulfate and Chloride were within control limits thus no data was qualified. The matrix spike and matrix spike duplicate analyses for cis-1,2-Dichloroethene conducted on sample MrM-MW-OW were outside control limits, indicating that the cis-1,2-Dichloroethene results may be biased low. The continuing calibration verification standard and laboratory control standard were with control limits thus no data was qualified. All laboratory blanks were acceptable. No VOCs were detected in the Trip Blank. A copy of the laboratory QA/QC report is included in Appendix D.

4.4 GROUNDWATER ANALYTICAL RESULTS

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix E. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results are included in Appendix F.

4.4.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 8.1 to 8.2 reported for this event. These pH values were similar to the October 2009 values, and slightly higher than previous values for all wells, and higher than field measurements indicating a possible bias in the laboratory results. Specific conductance ranged from 646 in the sample from MW-OW to 896 in MW-9R. Sulfate remained low (5 mg/L) and Chloride slightly high (17 mg/L) in MW-OW, but were similar to previous events in MW-9R. Nitrate + Nitrite was not

detected in MW-11, MW-12, and MW-OW. Nitrate + Nitrite was detected at a concentration of 2.95 mg/L in MW-9R, well below the maximum contaminant level (MCL) of 10 mg/L and slightly lower than previous values. These values are also similar to those observed in the background well MW-5 in previous sampling events and in other shallow wells. The indicator parameters for the new wells, MW-11 and MW-12, are similar to the values for wells MW-OW and MW-HW, indicating that they are completed in the same deeper aquifer as those wells.

4.4.2 Dissolved Metals

Two metals were detected in facility wells during this sampling event. Iron was detected in MW-11, MW-12, the MW-12 duplicate and MW-OW at 0.11, 0.31, 0.30, and 0.81 mg/L respectively. The values for MW-11 and MW-12 are typical for deeper aquifer wells, and the value for MW-OW is only slightly higher than typical deeper aquifer values. The concentrations in MW-12 and MW-OW are greater than the secondary MCL for Iron of 0.3 mg/L. Zinc was detected in MW-OW at 0.46 mg/L, which is higher than typical for the deeper aquifer. The zinc concentration in MW-OW had decreased significantly from December 2007 to October 2009, but increased slightly in October 2010.

4.4.3 Volatile Organic Compounds

Six VOCs were detected in MW-OW and during this sampling event (concentrations in ug/L): Benzene (0.74 J), Ethyl benzene (1.6), Styrene (1.8), Total Xylenes (0.41 J), cis-1,2-Dichloroethene (20), and Vinyl chloride (0.57 J). The concentrations of all VOCs decreased from the October 2009 sampling. The number of compounds detected also decreased from seven to six, as Trichloroethene was not detected in MW-OW during the October 2010 sampling event. Vinyl chloride remains above the Montana Human Health Standard for groundwater of 0.2 ug/L but below the MCL of 2 ug/L. Two VOCs were detected in MW-9R: cis-1,2-Dichloroethene (3.8) and Tetrachloroethene (0.33 J), down from three in October 2009. The concentration of cis-1,2-Dichloroethene increased but the concentration of Tetrachloroethene decreased from the October 2009 concentrations, and Trichloroethene was also not detected in MW-9R. One VOC, cis-1,2-Dichloroethene, was detected in well MW-12 at concentrations of 0.57 J and 0.62 J ug/L in the original sample and duplicate sample. VOCs were not detected in MW-11.

5.0 STATISTICAL ANALYSIS

5.1 STATISTICAL METHODS

The statistical analyses were performed using the groundwater statistical software package Sanitas v.9.0.34. The analyses were conducted separately for the shallow well (MW-9R) and deep wells (MW-11, MW-12, and MW-OW). The validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11, MW-12, and MW-OW) and had been historically detected at least once in the background well (MW-HW) were analyzed. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter was considered a statistical exceedance of background. As a result of the screening described above, the parameters selected for statistical analysis were: pH (shallow and deep), SC (shallow and deep), Chloride (shallow and deep), Sulfate (shallow and deep), Nitrate + Nitrite (shallow), Iron (deep), and Zinc (deep).

For the deep wells each selected parameter was compared to the background dataset using an inter-well prediction interval analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction interval analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

Additional review of the data from all of the shallow wells indicated that groundwater chemistry varies significantly between the different shallow wells, making the use of the up gradient wells as a background dataset suspect. Because of this, only trend analyses were conducted for the shallow well. A Sen's Slope/Mann Kendall test was conducted on all parameters detected in MW-9R to analyze any trends in the data.

5.2 ANALYSIS RESULTS

Table 2 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix G. Due to the small size of the background datasets the confidence levels for non-parametric tests were less than 95%. The tests for Chloride, Sulfate, and Iron in the deep wells (MW-11, MW-12, and MW-OW) had a confidence level of 85.71%. Trend analyses cannot be conducted in MW-11 and MW-12 until the dataset includes four sampling events. MW-9R does not have sufficient historical data to determine the significance of trends.

The values from the current sampling event for SC and Sulfate for all of the deep wells and for Chloride and Iron in MW-11 and MW-12 were within the prediction limits. The pH in MW-11, MW-12, and MW-OW exceeded the prediction limits, and exhibited a significant increasing trend in MW-OW. All pH values have been higher than previous measurements during the last two sampling events, indicating this trend may be due to a change in laboratory procedures. Chloride exceeded the prediction limits in MW-OW and exhibited a significant increasing trend. Iron and Zinc in MW-OW exceeded the prediction limits, but did not display significant increasing trends. Because none of the VOCs detected in MW-12 and MW-OW have been detected in the background well, the prediction limits for these parameters was detection and all were exceedances. However, no VOCs exhibited significant increasing trends in MW-OW.

Increasing trends for pH, SC, Chloride, Sulfate, and cis-1,2-Dichloroethene, and decreasing trends for Nitrate + Nitrite and Tetrachloroethene were noted in MW-9R. Because the Mann-Kendall test requires six data points for significance at the 98% confidence level, significance of these trends cannot be determined.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Methane and groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on February 26, June 21, October 25, 26, and 27, 2010. Methane and oxygen levels were measured in four wells and two methane vents, water levels were measured in nine wells, and groundwater samples were collected from four wells. All currently used wells were inspected.

Methane was detected in well MW-5M and in both methane vents, and exceeded the LEL at MW-5M during the February 2010 event. Oxygen levels were below ten percent in MW-5M preventing accurate methane readings. The office building is locked, thus methane monitoring of that structure can not be conducted. Methane migration may be occurring to the northeast of the facility, however, the adjacent property is only used for pasture thus the risk is minimal.

The static water levels measured during the February 2010 event were similar to the October 2009 levels then increased greatly in the June 2010 event and decreased in the October 2010 event. These changes in water level were likely due to the spring snowmelt and precipitation, and are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored during the quarterly methane monitoring events in the future to provide additional data on water level trends.

Two VOCs were detected in MW-9R at low levels. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Because only five sampling events have been conducted at MW-9R, additional data is needed to evaluate the contamination in that well. Dissolved metals have not been detected in MW-9R and no longer need to be sampled at that well. Well MW-9R will continue to be sampled in future events for pH, SC, Chloride, Sulfate Nitrate +Nitrite, and VOCs. MW-HW was not sampled during this event. Additional background data from this well would be useful for evaluating the results from the other deep wells. MW-HW will continue to be sampled on a regular basis to increase the background dataset size for the deep wells. Well MW-OW continues to show both inorganic and organic contamination. Sulfate has returned to

normal levels, but Chloride remains slightly elevated. Zinc and Iron concentrations are variable but remain above normal levels. These metals are possibly the result of previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but Vinyl chloride exceeds the Montana Human Health Standard for groundwater. MW-OW will continue to be sampled to track concentration trend, but will no longer be a point of compliance well. The new monitoring wells show general chemistry similar to the other deep wells indicating that they are completed in the same deeper aquifer. The analytical results from well MW-11 show no impacts from landfill leachate. One VOC, cis-1,2-Dichloroethene, was detected at a very low level in MW-12. This detection indicates that well MW-12 is located down gradient from MW-OW in the plume of contamination. The single detection and low concentration may indicate that natural attenuation is occurring in the VOC plume between MW-OW and MW-12. Based on the detection of cis-1,2-Dichloroethene in MW-12 above background levels but below groundwater protection standards, the facility will remain in assessment monitoring with semi-annual sampling. MW-11 and MW-12 will be sampled as the point of compliance wells for the facility.

The next quarterly methane and groundwater level monitoring event will occur in January or February 2011. The next groundwater sampling event will be conducted in May or June 2011. The Sampling and Analysis Plan for the facility will be updated prior to the spring 2011 sampling event to include the new wells and modified sampling procedures.

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TABLES

Table 1: Summary of Water Level and Total Depth Measurements

Well	Date	Depth to Water (ft)	Reference Elevation (ft)	Static Water Level	Total Depth (ft)
MW-4	2/5/2010	Dry	4197.11	- Dry	NM
	3/26/2010	101.91	4205.35	4105.44	NM
MW-5	8/21/2010	95.44	4256.35	4172.91	NM
	10/23/2010	85.65	4261.55	4185.90	NM
	3/26/2010	104.5	4264.87	4160.37	NM
MW-6	8/21/2010	93.51	4264.87	4171.36	NM
	10/23/2010	98.53	4264.87	4166.34	NM
MW-7R	2/26/2010	50.25	4187 ⁽¹⁾	4177	NM
	8/21/2010	6.93	4187 ⁽¹⁾	4150	NM
MW-8	3/26/2010	16.27	4172.76	4184.55	NM
	8/21/2010	2.82	4172.76	4189.94	NM
	3/26/2010	42.15	4201 ⁽¹⁾	4159	NM
MW-9S	8/21/2010	26.85	4201 ⁽¹⁾	4185	NM
	10/23/2010	45.14	4201 ⁽¹⁾	4181	50.40
MW-11	10/23/2010	32.4	4195 ⁽¹⁾	4185	82.85
MW-12	3/26/2010	1.85	4195 ⁽¹⁾	4195	105.20
	3/26/2010	24.49	4195 ⁽¹⁾	4172	NM
MW-CW	8/21/2010	23.8	4195 ⁽¹⁾	4172	NM
	10/23/2010	27.93	4195 ⁽¹⁾	4172	NM

TABLES

Notes:

NM = Not measured

(1) Elevation estimated from topographic contours (50') and field observations

Table 1: Summary of Water Level and Total Depth Measurements

Well	Date	Depth to Water (ft)	Reference Elevation (ft)	Static Water Level	Total Depth (ft)
MW-4	2/26/2010	Dry	4197.11	Dry	NM
MW-5	2/26/2010	102.91	4268.35	4165.44	NM
	6/21/2010	95.44	4268.35	4172.91	NM
	10/25/2010	98.85	4268.35	4169.50	NM
MW-6	2/26/2010	104.8	4264.87	4160.07	NM
	6/21/2010	93.51	4264.87	4171.36	NM
	10/25/2010	98.03	4264.87	4166.84	NM
MW-7R	2/26/2010	20.25	4197 ⁽¹⁾	4177	NM
	6/21/2010	6.93	4197 ⁽¹⁾	4190	NM
MW-8	2/26/2010	18.27	4172.79	4154.52	NM
	6/21/2010	2.82	4172.79	4169.97	NM
MW-9R	2/26/2010	42.13	4201 ⁽¹⁾	4159	NM
	6/21/2010	20.85	4201 ⁽¹⁾	4180	NM
	10/25/2010	40.14	4201 ⁽¹⁾	4161	50.49
MW-11	10/25/2010	32.45	4198 ⁽¹⁾	4166	82.89
MW-12	10/25/2010	1.93	4170 ⁽¹⁾	4168	105.28
MW-OW	2/26/2010	34.49	4196 ⁽¹⁾	4162	NM
	6/21/2010	23.6	4196 ⁽¹⁾	4172	NM
	10/25/2010	27.93	4196 ⁽¹⁾	4168	NM

Notes:

NM = Not measured

(1) Elevation estimated from topographic contours (5ft) and field observations

Table 2: Summary of Results of Statistical Analyses

Parameter	Well	Prediction Interval Analysis					Trend Analysis	
		Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceedance?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	N/A	N/A	8.1	N/A	+0.054	?
	MW-11	normal	95	6.84-8.09	8.2	Yes	?	?
	MW-12	normal	95	6.84-8.09	8.1	Yes	?	?
	MW-OW	normal	95	6.84-8.09	8.2	Yes	+0.031	Yes
SC	MW-9R	N/A	N/A	N/A	896	N/A	+7.644	?
	MW-11	normal	95	878.5	655	No	N/A	N/A
	MW-12	normal	95	878.5	690.5	No	N/A	N/A
	MW-OW	normal	95	878.5	646	No	N/A	N/A
Chloride	MW-9R	N/A	N/A	N/A	17	N/A	+0.501	?
	MW-11	non-normal	85.71	10	3	No	N/A	N/A
	MW-12	non-normal	85.71	10	4.5	No	N/A	N/A
	MW-OW	non-normal	85.71	10	17	Yes	+0.844	Yes
Sulfate	MW-9R	N/A	N/A	N/A	68	N/A	-2.224	?
	MW-11	non-normal	85.71	107	42	No	N/A	N/A
	MW-12	non-normal	85.71	107	34	No	N/A	N/A
	MW-OW	non-normal	85.71	107	5	No	N/A	N/A
Nitrate+Nitrite	MW-9R	N/A	N/A	N/A	2.95	N/A	-0.217	?
Iron	MW-11	non-normal	85.71	0.75	0.11	No	N/A	N/A
	MW-12	non-normal	85.71	0.75	0.305	No	N/A	N/A
	MW-OW	non-normal	85.71	0.75	0.810	Yes	+0.033	No
Zinc	MW-OW	square root	95	0.091	0.46	Yes	+0.017	No
Benzene	MW-OW	ND	N/A	ND	0.74 J	Yes	+0.010	No
cis-1,2-DCE	MW-9R	N/A	N/A	N/A	3.8	N/A	+0.343	?
	MW-12	ND	N/A	ND	0.595 J	Yes	N/A	N/A
	MW-OW	ND	N/A	ND	20	Yes	+1.197	No
Ethyl benzene	MW-OW	ND	N/A	ND	1.6	Yes	+0.020	No
Styrene	MW-OW	ND	N/A	ND	1.8	Yes	+0.008	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.33 J	Yes	-0.023	?
Vinyl chloride	MW-OW	ND	N/A	ND	0.57 J	Yes	0	No
Total Xylenes	MW-OW	ND	N/A	ND	0.41 J	Yes	0	No

Notes:

ND = Non-detect

N/A = Not applicable

? = Insufficient data for test

FIGURES

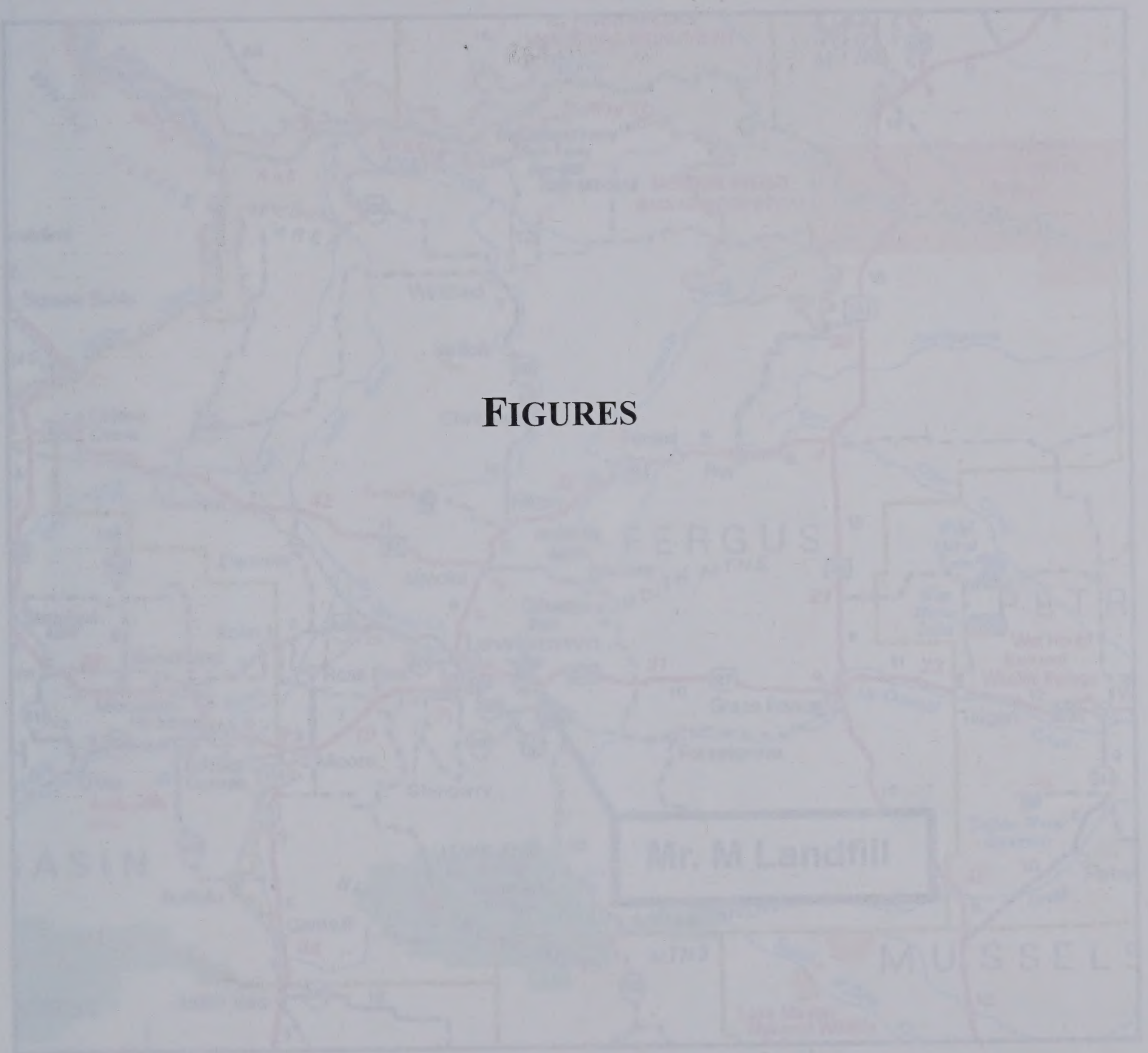


Figure 1 Location Map

Adapted from State of Montana Highway Map.

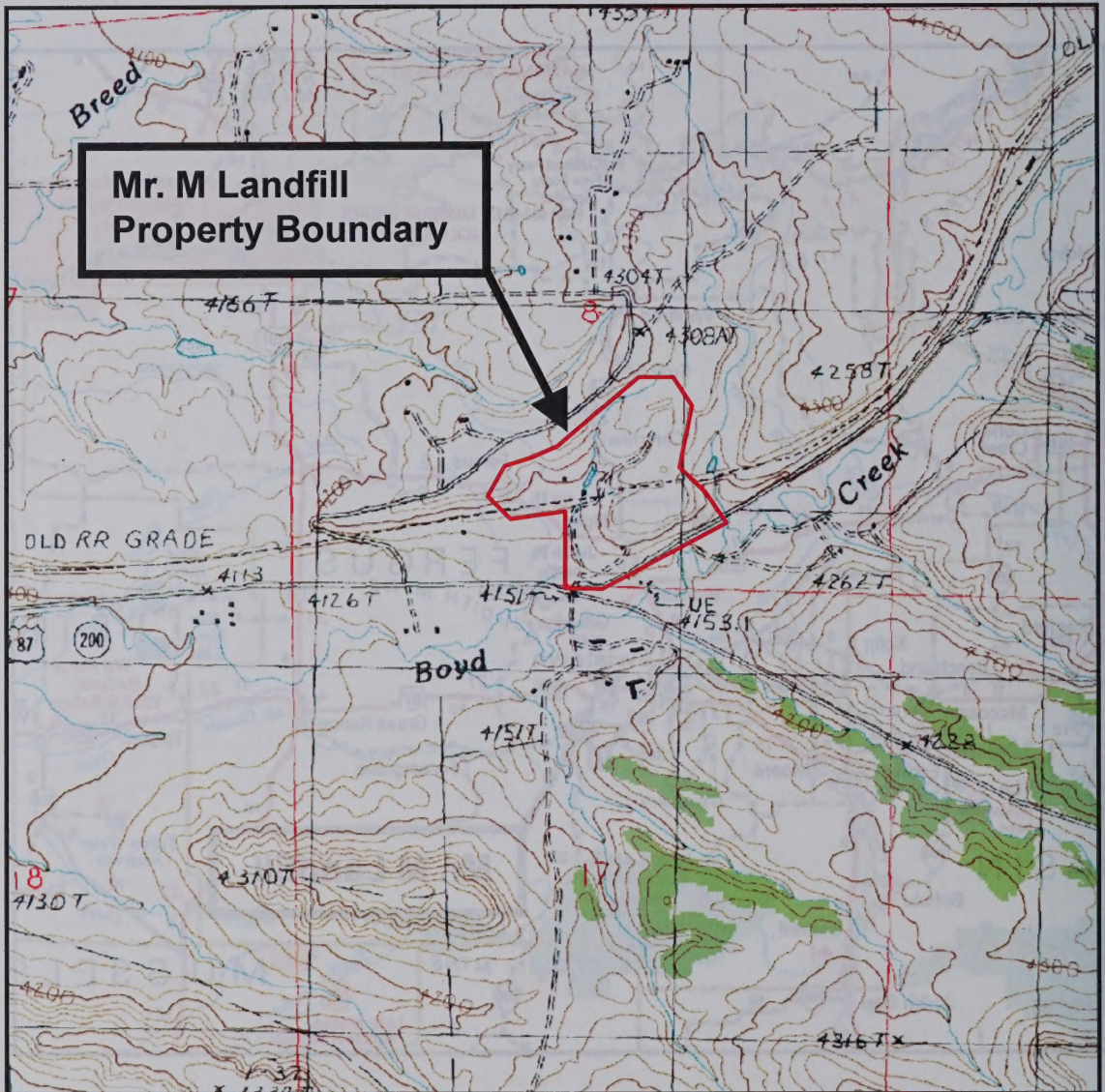


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.



Figure 3: Locations of Wells Installed and Abandoned

Base Aerial Photo from 2009.



Figure 4: Locations of Monitoring Points

Base Aerial Photo from 2009.



Figure 5: Groundwater Levels

Base Aerial Photo from 2009.

Form EQ-100 (Solid Waste) ☒ Other

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Facility/Project Name: Winter Mt Landfill		Facility License Number: 202	County: Bergen
Drilling Details (Name of driller and company): Driller Name: Mack Last Name: Smith		Date Drilling Started: 10/12/2010 (mm/dd/yyyy)	Drilling Method: Air Rotary
Drilling Company Name and License No.: Central Drilling		Date Drilling Completed: 10/12/2010 (mm/dd/yyyy)	
NY CNIC Well No.:	Well Diameter: 2 (inches)	Surface Elevation (ft. MSL):	Free water encountered? No ☐ Yes ☒ at 750'
Well No. Well Name: MW-1	Borehole Diameter: 6 (inches)		
Drilling Conducted By: (name and company):		Well Location (Legal Description, its section, & bearing): T2S, R2E, S10W, 1st Section 2 Township 12 N Range 19 E	
Title Number: A10000 Last Name: Van Gert			
Company Name: N.J. Dept. Solid Waste Services			

APPENDIX A: WELL LOGS, COMPLETION FORMS, & DEVELOPMENT FORMS

Well Log		Well Log		Well Log		Well Log		Well Log	
Depth (ft.)	Well Log	Depth (ft.)	Well Log	Depth (ft.)	Well Log	Depth (ft.)	Well Log	Depth (ft.)	Well Log
0-1	0-1	1-2	1-2	2-3	2-3	3-4	3-4	4-5	4-5
5-6	5-6	6-7	6-7	7-8	7-8	8-9	8-9	9-10	9-10
10-11	10-11	11-12	11-12	12-13	12-13	13-14	13-14	14-15	14-15
15-16	15-16	16-17	16-17	17-18	17-18	18-19	18-19	19-20	19-20
20-21	20-21	21-22	21-22	22-23	22-23	23-24	23-24	24-25	24-25
25-26	25-26	26-27	26-27	27-28	27-28	28-29	28-29	29-30	29-30
30-31	30-31	31-32	31-32	32-33	32-33	33-34	33-34	34-35	34-35
35-36	35-36	36-37	36-37	37-38	37-38	38-39	38-39	39-40	39-40
40-41	40-41	41-42	41-42	42-43	42-43	43-44	43-44	44-45	44-45
45-46	45-46	46-47	46-47	47-48	47-48	48-49	48-49	49-50	49-50
50-51	50-51	51-52	51-52	52-53	52-53	53-54	53-54	54-55	54-55
55-56	55-56	56-57	56-57	57-58	57-58	58-59	58-59	59-60	59-60
60-61	60-61	61-62	61-62	62-63	62-63	63-64	63-64	64-65	64-65
65-66	65-66	66-67	66-67	67-68	67-68	68-69	68-69	69-70	69-70
70-71	70-71	71-72	71-72	72-73	72-73	73-74	73-74	74-75	74-75
75-76	75-76	76-77	76-77	77-78	77-78	78-79	78-79	79-80	79-80
80-81	80-81	81-82	81-82	82-83	82-83	83-84	83-84	84-85	84-85
85-86	85-86	86-87	86-87	87-88	87-88	88-89	88-89	89-90	89-90
90-91	90-91	91-92	91-92	92-93	92-93	93-94	93-94	94-95	94-95
95-96	95-96	96-97	96-97	97-98	97-98	98-99	98-99	99-100	99-100

SOIL BORING LOG INFORMATION FORM

Route To: Solid Waste ☒ Other:

Page 1 of 2

Facility/Project Name: Mister M Landfill						Facility License Number: 302		County: Fergus	
Boring Drilled By: (Name of driller and company) First Name: Mark Last Name: Smith						Date Drilling Started: 10/12/2010 (mm/dd/yyyy)		Drilling Method Air Rotary	
Drilling Company Name and License No.: Central Drilling						Date Drilling Completed: 10/12/2010 (mm/dd/yyyy)			
MT GWIC Well No.: Well No./Well Name: MW-11			Well Diameter: 2 (inches) Borehole Diameter: 6 (inches)		Surface Elevation: (ft. MSL)		Free water encountered? No ☐ Yes ☒ at: 75ft		
Boring Logged By: (name and company) First Name: Martin Last Name: Van Oort						Well Location Legal Description: (to nearest 1/4, 1/4 section) SE 1/4 of SW 1/4 Section 8 Township 15 N Range 19 E			
Company Name: MT DEQ Solid Waste Section									
Grid Location (if applicable): feet N or S feet E or W			GPS Location: (NAD 83) Latitude: Longitude:						
Depth	Sample	Symbol	PID/FID (ppm)	Time (minutes)	Blows per foot	Soil/Rock Description and Geologic Origin for Each Major Unit			
0				1230		0-7: Fat clay fill – pond berm			
5						7-12: Tan fractured Sandstone			
10						12-14: Black Shale			
15						14-18: Red Shale			
20						18-20: Reddish Black Shale			
25						20-24: Red Shale			
30						24-25: Reddish Black Shale			
						25-27: Gray Shale			
						27-28: Red Shale			
						28-32: Light Gray Shale			

Depth	Sample	Symbol	PID/FID (ppm)	Time (minutes)	Blows per foot	Soil/Rock Description and Geologic Origin for Each Major Unit
30						32-35: Red Shale
35						35-37.5: Gray Shale
						37.5-41: Red Shale
40						41-42: Dark Red Shale
						42-49: Red Shale
45						
						49-50: Gray Shale
50						50-51: Red Shale
						51-52: Gray Shale
						52-53: Red Shale
						53-58: Dark Gray Shale
55						
						58-71: Gray Shale
60						
65						
70						
						71-75: Dark Gray Shale
						Wet @ 74'
75						Water @ 75' ~12gpm
						75-80: Tan Sandstone
80			1345			End of boring = 80'

MONITORING WELL CONSTRUCTION FORM

Route To: Solid Waste ☒ Other:

Facility/Project Name: Mister M		Well Name: MW-11	GWIC Well ID.:
Facility License Number: 302	Well GPS Location (NAD 83): Lat.: Long.: Well Location: SE ¼, SW ¼, Sec 8, T15N, R19E (legal description to nearest ¼, ¼ section)		Type of Well: Monitoring Well ☒ Piezometer ☐
Date Well Installed: 10/12/2010		Location of well relative to waste source: Upgradient ☐ Downgradient ☒ Side-gradient ☐ Unknown ☐	
Distance from waste source boundary: ~475 ft			
Well Installed By: (name and company) First Name: Mark Last Name: Smith Company Name: Central Drilling		Well Constructor License Number:	

A. Protective pipe, top elevation: ft. MSL
 B. Well casing, top elevation: ft. MSL
 C. Land Surface Elevation: ft. MSL
 D. Surface seal, bottom: 0.5 ft. BGS

12. USCS classification of soil near screen:
 GP ☐ GM ☐ GC ☐ GW ☐ SP ☐ SM ☐
 SC ☐ SW ☐ ML ☐ MH ☐ CL ☐ CH ☐
 Bedrock ☒
 13. Sieve analysis attached? Yes ☐ No ☒
 14. Drilling method used: Rotary ☒ HSA ☐
 Other:
 15. Drilling fluid used:
 Water ☐ Air ☒ Drilling Mud ☐ None ☐
 16. Drilling additives used? Yes ☐ No ☒
 Specify:
 17. Source of water: n/a

E. Bentonite seal: top 64.5 ft. BGS

F. Fine sand: top ft. BGS

G. Filter pack: top 67.5 ft. BGS

H. Screen joint: top 70.0 ft. BGS

I. Well bottom: top 80.0 ft. BGS

J. Filter pack: bottom 80.0 ft. BGS

K. Borehole: bottom 80.0 ft. BGS

L. Borehole diameter: 6.0 in.

M. O.D. well casing: 2.375 in.

N. I.D. well casing: 2.0 in.

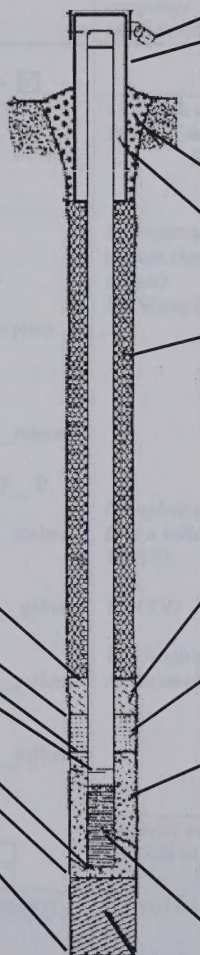
CERTIFICATION:
 I hereby certify that the information on this form is true
 and correct to the best of my knowledge:

Martin Van Oort

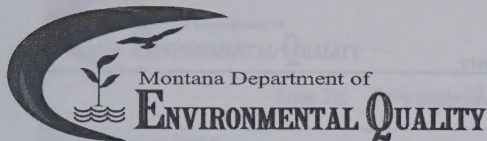
(Signature)

MT DEQ Solid Waste Section

(Company Name)



- Cap and lock? ☒ Yes ☐ No
- Protective cover pipe:
 - Inside diameter: 6.0 in.
 - Length: 5.0 ft.
 - Material: Steel ☒
Other:
- Surface seal: Bentonite ☐ Concrete ☒
Other:
- Material btw. well casing and protective pipe:
Bentonite ☐ Annular space seal ☒
Other:
- Annular space seal:
 - Granular benonite ☐
 - lbs/gal mud weight...bentonite/sand slurry ☐
 - lbs/gal mud weight...bentonite slurry ☒
 - % bentonitebentonite/cement grout ☐
 - ft³ volume added for any of the above
 - How installed: Tremie ☐ Tremie pumped ☒
Gravity ☐
- Bentonite seal: Bentonite granules ☐
☐ ¼ in. ☐ 3/8 in. ☐ ½ in. Bentonite pellets ☒
Other:
- Fine sand material: (Manufacturer, product name, mesh size)
N/A
Volume added: ft³
- Filter pack material: (Manufacturer, product name, mesh size) 10/20 Colorado silica sand
Volume added: ft³
- Well casing: Flush-threaded Sch 40 PVC ☒
Flush-threaded Sch 80 PVC ☐
Other:
- Screen material: Sch 40 PVC
 - Screen type: factory cut ☒ continuous slot ☐
Other:
 - Manufacturer:
 - Slot size: 0.020 in.
 - Slotted length: 10.0 ft.
- Backfill material: or None ☒



MONITORING WELL DEVELOPMENT FORM

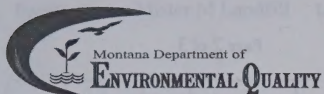
Route to: Solid Waste ☒ Other: ☐ Specify: _____

Facility/Project Name: Mister M Landfill		Facility License Number: 302		Well Name: MW-11	
County: Fergus		MT GWIC Unique Well Number:		Well Installed By: (name and company) Mark Smith/Central Drilling	
Monitoring Well Constructor License Number:					

1. Can this well be purged dry? Yes ☐ No ☒ 2. Well development method: (check all that apply) surged with bailer and bailed ☐ surged with bailer and pumped ☐ surged with block and bailed ☐ surged with block and pumped ☐ surged with block, bailed and pumped ☐ Compressed air ☐ Bailed only ☐ Pumped only ☐ surged w/ pump Pumped slowly ☐ Other: _____ 3. Time spent developing well <u>160</u> minutes 4. Depth of well from TOC (to nearest 0.01 ft) <u>82.89</u> ft. 5. Inside diameter of well <u>2</u> inches 6. Volume of water in filter pack and well casing (to nearest 0.1 gal) <u>24.5</u> gallons 7. Volume of water removed from well casing (to nearest 0.1 gal) <u>350</u> gallons 8. Volume of water added, if any (to nearest 0.1 gal) <u>0</u> gallons 9. Source of water added: 10. Analysis performed on water added? Yes ☐ No ☐ (if so, attach results)	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:20%; text-align: center;">Before Development</th> <th style="width:20%; text-align: center;">After Development</th> </tr> </thead> <tbody> <tr> <td>11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time _____</td> <td style="text-align: center;">_____ ft _____ am _____ pm</td> <td style="text-align: center;">_____ ft _____ am _____ pm</td> </tr> <tr> <td>12. Sediment in well bottom (to nearest 0.1 inches)</td> <td style="text-align: center;">_____ 0 _____ inches</td> <td style="text-align: center;">_____ 0 _____ inches</td> </tr> <tr> <td>13. Water Clarity</td> <td>Clear ☐ Turbid ☒ Describe: _____</td> <td>Clear ☒ Turbid ☐ Describe: _____</td> </tr> <tr> <td></td> <td>Initially orange colored then turned gray.</td> <td>Very slight gray tint after final surge, cleared in < 1 minute.</td> </tr> </tbody> </table> Complete questions 14 and 15 if drilling fluids were used and well is at a solid waste facility 14. TSS _____ mg/l _____ mg/l 15. COD _____ mg/l _____ mg/l 16. Additional comments on development: Additional data on back. I hereby certify that the above information is true and correct to the best of my knowledge Printed Initials: <u>MVO</u> Signature: Martin Van Oort Company Name: MT DEQ Solid Waste Section			Before Development	After Development	11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time _____	_____ ft _____ am _____ pm	_____ ft _____ am _____ pm	12. Sediment in well bottom (to nearest 0.1 inches)	_____ 0 _____ inches	_____ 0 _____ inches	13. Water Clarity	Clear ☐ Turbid ☒ Describe: _____	Clear ☒ Turbid ☐ Describe: _____		Initially orange colored then turned gray.	Very slight gray tint after final surge, cleared in < 1 minute.
	Before Development	After Development															
11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time _____	_____ ft _____ am _____ pm	_____ ft _____ am _____ pm															
12. Sediment in well bottom (to nearest 0.1 inches)	_____ 0 _____ inches	_____ 0 _____ inches															
13. Water Clarity	Clear ☐ Turbid ☒ Describe: _____	Clear ☒ Turbid ☐ Describe: _____															
	Initially orange colored then turned gray.	Very slight gray tint after final surge, cleared in < 1 minute.															

Well Development Data – MW-11

Time	Flow Rate	Volume	pH	Cond.	Comments
1345	2 gpm	0 gal			Start development
1430	2 gpm		6.42	0.64	
1435			6.64	0.64	
1440			6.45	0.64	
1445	2 gpm		6.54	0.65	
1455		150 gal			Surge
1500					Surge
1505					Surge
1510			6.61	0.64	
1525	2 gpm	220 gal			Surge, gray water after surge clears up after ~ 5 gallons
1610		320 gal			Surge, water clears < 1 minute after surge
1620			6.66	0.64	
1625		350 gal			Stop development



SOIL BORING LOG INFORMATION FORM

Route To: Solid Waste ☒ Other:

Page 1 of 3

Facility/Project Name: Mister M Landfill						Facility License Number: 302		County: Fergus	
Boring Drilled By: (Name of driller and company) First Name: Mark Last Name: Smith Drilling Company Name and License No.: Central Drilling						Date Drilling Started: 10/13/2010 (mm/dd/yyyy)		Drilling Method Air Rotary	
MT GWIC Well No.: Well No./Well Name: MW-12						Well Diameter: 2 (inches) Borehole Diameter: 6 (inches)		Surface Elevation: (ft. MSL) Free water encountered? No ☐ Yes ☒ at: 44ft	
Boring Logged By: (name and company) First Name: Martin Last Name: Van Oort Company Name: MT DEQ Solid Waste Section						Well Location Legal Description: (to nearest 1/4, 1/4 section) SE 1/4 of SW 1/4 Section 8 Township 15 N Range 19 E			
Grid Location (if applicable): feet N or S feet E or W						GPS Location: (NAD 83) Latitude: Longitude:			
Depth	Sample	Symbol	PID/FID (ppm)	Time (minutes)	Blows per foot	Soil/Rock Description and Geologic Origin for Each Major Unit			
0				855		0-6: Red clayey silt, topsoil			
5						6-11: Brown clayey silt			
10						11-13: Tan Sandstone			
15						13-16: Brown clay			
20						16-22: Dark gray shale, weak			
25						22-34: Red shale Moist @ 24' – must add water to continue			
30									

Depth	Sample	Symbol	PID/FID (ppm)	Time (minutes)	Blows per foot	Soil/Rock Description and Geologic Origin for Each Major Unit
—30						
—35						34-36: Gray sandy shale 36-38: Gray shale 38-42: Gray sandy shale and sandstone
—40						42-43: Gray shale 43-49: Gray silty sandstone Water @ 44ft, ~1-2gpm
—45						
—50						49-51: Gray sandy shale 51-56: Tan sandstone
—55						Water @ ~55ft, <1gpm 56-60: Gray silty sandstone
—60						60-63: Gray clayey sandstone
—65						63-66: Black shale 66-69: Gray shale
—70						69-75: Gray sandstone
—75						75-78: Gray silty Sandstone
—80						78-83: Tan sandstone

Depth	Sample	Symbol	PID/FID (ppm)	Time (minutes)	Blows per foot	Soil/Rock Description and Geologic Origin for Each Major Unit
—80						
—85						83-86: Red shale
						86-87: Gray silty sandstone
—90						87-97: Red shale
—95						
						97-99: Gray silty, sandy, shale
--100						99-102: Gray fine sandstone, hard, fractured Water @ 100ft, ~2gpm
						102-103: Red shale
--105				1205		103-105: Gray silty sandstone, hard End of boring
--110						
--115						
--120						
--125						
--130						

MONITORING WELL CONSTRUCTION FORM

Route To: Solid Waste ☒ Other:

Facility/Project Name: Mister M Landfill		Well Name: MW-12	GWIC Well ID.:
Facility License Number: 302	Well GPS Location (NAD 83): Lat.: Long.: Well Location: SE ¼, SW ¼, Sec 8, T15N, R19E (legal description to nearest ¼, ¼ section)		Type of Well: Monitoring Well ☒ Piezometer ☐
Date Well Installed: 10/13/2010		Location of well relative to waste source: Upgradient ☐ Downgradient ☒ Side-gradient ☐ Unknown ☐	
Distance from waste source boundary: ~480ft			
Well Installed By: (name and company) First Name: Mark Last Name: Smith Company Name: Central Drilling		Well Constructor License Number:	

A. Protective pipe, top elevation: ft. MSL
 B. Well casing, top elevation: ft. MSL
 C. Land Surface Elevation: ft. MSL
 D. Surface seal, bottom: 0.5 ft. BGS

12. USCS classification of soil near screen:
 GP ☐ GM ☐ GC ☐ GW ☐ SP ☐ SM ☐
 SC ☐ SW ☐ ML ☐ MH ☐ CL ☐ CH ☐
 Bedrock ☒

13. Sieve analysis attached? Yes ☐ No ☒

14. Drilling method used: Rotary ☒ HSA ☐

Other:

15. Drilling fluid used:

Water ☐ Air ☒ Drilling Mud ☐ None ☐

16. Drilling additives used? Yes ☐ No ☒

Specify:

17. Source of water: n/a

E. Bentonite seal: top 89.5 ft. BGS

F. Fine sand: top ft. BGS

G. Filter pack: top 92.5 ft. BGS

H. Screen joint: top 95.0 ft. BGS

I. Well bottom: top 105.0 ft. BGS

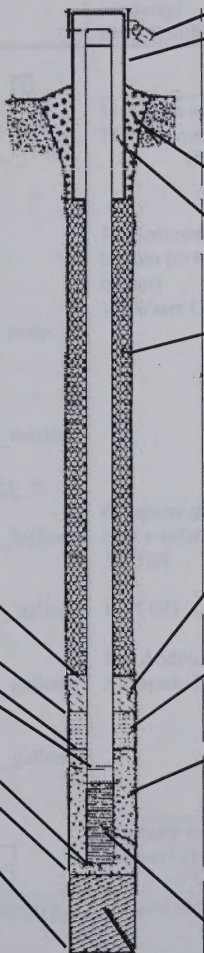
J. Filter pack: bottom 105.5 ft. BGS

K. Borehole: bottom 105.5 ft. BGS

L. Borehole diameter: 6.0 in.

M. O.D. well casing: 2.375 in.

N. I.D. well casing: 2.0 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:

a. Inside diameter: 6.0 in.

b. Length: 5.0 ft.

c. Material: Steel ☒

Other:

3. Surface seal: Bentonite ☐ Concrete ☒

Other:

4. Material btw. well casing and protective pipe:

Bentonite ☐ Annular space seal ☒

Other:

5. Annular space seal:

a. Granular bentonite ☐

b. lbs/gal mud weight...bentonite/sand slurry ☐

c. lbs/gal mud weight...bentonite slurry ☒

d. % bentonitebentonite/cement grout ☐

e. ft³ volume added for any of the above

f. How installed: Tremie ☐ Tremie pumped ☒

Gravity ☐

6. Bentonite seal: Bentonite granules ☐

☐ ¼ in. ☐ 3/8 in. ☐ ½ in. Bentonite pellets ☒

Other:

7. Fine sand material: (Manufacturer, product name, mesh size)

N/A

Volume added: ft³

8. Filter pack material: (Manufacturer, product name, mesh size) 10/20 Colorado silica sand

Volume added: ft³

9. Well casing: Flush-threaded Sch 40 PVC ☒

Flush-threaded Sch 80 PVC ☐

Other:

10. Screen material: Sch 40 PVC

a. Screen type: factory cut ☒ continuous slot ☐

Other:

b. Manufacturer:

c. Slot size: 0.020 in.

d. Slotted length: 10.0 ft.

11. Backfill material:

or None ☒

CERTIFICATION:

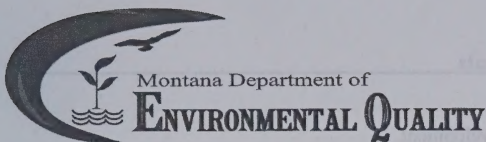
I hereby certify that the information on this form is true and correct to the best of my knowledge:

Martin Van Oort

(Signature)

MT DEQ Solid Waste Section

(Company Name)



MONITORING WELL DEVELOPMENT FORM

Route to: Solid Waste ☒ Other: ☐ Specify: _____

Facility/Project Name: Mister M Landfill		Facility License Number: 302		Well Name: MW-12	
County: Fergus	MT GWIC Unique Well Number:	Well Installed By: (name and company) Mark Smith/Central Drilling		Monitoring Well Constructor License Number:	

1. Can this well be purged dry? Yes ☐ No ☒ 2. Well development method: (check all that apply) surged with bailer and bailed ☐ surged with bailer and pumped ☐ surged with block and bailed ☐ surged with block and pumped ☐ surged with block, bailed and pumped ☐ Compressed air ☐ Bailed only ☐ Pumped only ☒ surged w/ pump Pumped slowly ☐ Other: _____ 3. Time spent developing well <u>157</u> minutes 4. Depth of well from TOC (to nearest 0.01 ft) <u>105.28</u> ft. 5. Inside diameter of well <u>2</u> inches 6. Volume of water in filter pack and well casing (to nearest 0.1 gal) <u>33.2</u> gallons 7. Volume of water removed from well casing (to nearest 0.1 gal) <u>230</u> gallons 8. Volume of water added, if any (to nearest 0.1 gal) <u>0</u> gallons 9. Source of water added: 10. Analysis performed on water added? Yes ☐ No ☐ (if so, attach results)	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:20%; text-align: center;">Before Development</th> <th style="width:20%; text-align: center;">After Development</th> </tr> </thead> <tbody> <tr> <td>11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time ☐ am ☐ pm</td> <td style="text-align: center;">_____ ft</td> <td style="text-align: center;">_____ ft</td> </tr> <tr> <td>12. Sediment in well bottom (to nearest 0.1 inches) _____</td> <td style="text-align: center;">_____ inches</td> <td style="text-align: center;">_____ inches</td> </tr> <tr> <td>13. Water Clarity</td> <td> Clear ☐ Turbid ☒ Describe: _____ Initially red colored then gray near end of development. </td> <td> Clear ☒ Turbid ☐ Describe: _____ Very slight gray tint after final surge, cleared in < 5 minutes. </td> </tr> </tbody> </table> Complete questions 14 and 15 if drilling fluids were used and well is at a solid waste facility 14. TSS _____ mg/l _____ mg/l 15. COD _____ mg/l _____ mg/l 16. Additional comments on development: Additional data on back. I hereby certify that the above information is true and correct to the best of my knowledge Printed Initials: <u>MVO</u> Signature: Martin Van Oort		Before Development	After Development	11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time ☐ am ☐ pm	_____ ft	_____ ft	12. Sediment in well bottom (to nearest 0.1 inches) _____	_____ inches	_____ inches	13. Water Clarity	Clear ☐ Turbid ☒ Describe: _____ Initially red colored then gray near end of development.	Clear ☒ Turbid ☐ Describe: _____ Very slight gray tint after final surge, cleared in < 5 minutes.
	Before Development	After Development											
11. Depth of water from TOC (to nearest 0.01 ft) Date (mm/dd/yyyy) _____ Time ☐ am ☐ pm	_____ ft	_____ ft											
12. Sediment in well bottom (to nearest 0.1 inches) _____	_____ inches	_____ inches											
13. Water Clarity	Clear ☐ Turbid ☒ Describe: _____ Initially red colored then gray near end of development.	Clear ☒ Turbid ☐ Describe: _____ Very slight gray tint after final surge, cleared in < 5 minutes.											

WELL DEVELOPED BY: (Persons name and company) Signature: Martin Van Oort	Company Name: MT DEQ Solid Waste Section
--	---

Well Development Data – MW-11

Time	Flow Rate	Volume	pH	Cond.	Comments
10/14/2010					
1710	1.8 gpm	0 gal			Start development
1715	0.1 gpm	9 gal			Flow slowed to a trickle, stop pump
1720	1.8 gpm				Start pump, surge
1725	0.1 gpm	17 gal			Stop pump
1730	1 gpm				Start pump
1735	1.2 gpm				
1740					Surge
1745	1.2 gpm				Surge
1750	1.3 gpm				
1755		55 gal			Stop pump
10/15/2010					
805	1.5 gpm		7.68	0.70	Start pump
812	0.1 gpm				Stop pump
818					Start pump, surge
823	0.1 gpm	75 gal			Stop pump
830					Pull pump to replace motor
855	1.75 gpm				Start pump
900	1.75 gpm		7.24	0.69	
905			7.68	0.70	Surge
910	1.35 gpm		7.69	0.70	
915					Recalibrate pH meter
925			7.45	0.69	
930	1.5 gpm		7.45	0.69	Surge
940					Surge
945		150 gal			
950	1.2 gpm				Surge
1000					Surge
1015		190 gal			
1020	1.3 gpm				Surge
1030					Surge
1045		230 gal			Stop development

APPENDIX B: FIELD NOTES & FORMS

2/26/10

Marta Van Oort

10:30

Arrive on site

Gate frozen to ground,
managed to open enough
to get truck through.

10:40

Prep Equipment

10:55

Walk to first wells

11:02

MW-8

DTW = 18.27

11:05

MW-1

 $O_2 = 14.4$ $CH_4 = 0$ $H_2S = 0$ $CO = 0$

11:14

MW-0W

DTW = 37.49

11:18

MW-9R

DTW = 42.13

11:25

MW-2

 $O_2 = 17.4$ $CH_4 = 0$ $H_2S = 0$ $CO = 0$

11:31

MW-7R

Cap stuck, got it off

DTW = 20.25

Hinge on lid is broken

W H W

2/26/10

Marta Van Oort

11:38

MW-10R

Well was hit by something.
Outer casing leaning over
(lid damaged, inner casing bent
but does not seem broken)

DTW =

Obstruction at 4 ft.

Can not get DTW prob-
ably, inner casing must be
broken. Well is out of
commission.

11:50

MW-4

DTW = Dry

TD = 20 ft

12:09

MW-6M

 $O_2 = 16.5$ $CH_4 = 0$ $H_2S = 0$ $CO = 0$

12:16

MW-6

DTW = 107.08

12:28

MW-5M

 $O_2 = 2.1$ $CH_4 = \text{Over Range}$ $H_2S = 0$ $CO = 0$

12:35

Recheck

 $O_2 = 2.1$ $CH_4 = \text{O.R.}$ $H_2S = 0.4$ $CO = 0$

W H W

"Rite in the Rain"

2/26/10

Martin Van Oort

12:44

MW-5

OTW = 102.91

13:01

South Vent

Methane meter still

Reading 25% LEL from

near large levels.

$O_2 = 12.1$

$CH_4 = 53.5$

$H_2S = 0$

$CO = 0$

13:09

North Vent

Meter still reading 24% LEL

$O_2 = 18.0$

$CH_4 = 83.0$

$H_2S = 0$

$CO = 0$

13:30

Back at Truck, packing

up

13:50

Leave site

6/18/10

Martin Van Oort

11:00

Caliente

gas meter

6/21/10

1030 Arrive on site

Pump set up at pond
discharging down driveway

Pond is ~ 2ft below berm.

Discharged water flowing around
MW-1 + MW-8.

Smaller pond has some water

Lots of soil has washed down
gully cut deeper

1045 Hand up road to top

Many soaps all along east
face of landfill.

Erosion damage on steep slope on
east side of landfill.

WVH "Litter in the Rain"

6-21-10

Marilyn Van Dort

1130

Begin CH₄ Monitoring
MW-6 & MW-6MDTW = 93.51 O₂ = 18.6

1145

MW-5M

CH₄ = 3.0 + O₂ = 2.7CO = 0 H₂S = 0

1154

MW-5

DTW = 95.44

Starting to rain
North Vent

1201

CH₄ = 6.0 O₂ = 19.6CO = 0 H₂S = 0

1210

Replace meter batteries, run slips

1220

MW-9R

DTW = 20.85

1223

MW-0W

DTW = 23.60

1229

MW-2 DTW = 6.93

1235

MW-2 CH₄ = 0 O₂ = 10.8CO = 0 H₂S = 0

1240

Check west slope, photos of
erosion

1258

MW-8 DTW = 2.82

1305

Leave site

Marilyn Van Dort

10-12-10

Marilyn Van Dort

8:10

Arrive on site

Rigs are here, no personnel

8:20

Call Mark, still waiting for
NW pipe, will wait on site to
prepare while waiting.

8:55

Mark on site, starting rig.

9:05

Show Mark drill sites. We
will start at location by pond.

9:20

Mark moving water truck to site.

9:30

Move rig to site

9:50

Helper on site w/ skid steer

10:00

Setting up rig at MW-11 location.

10:15

Spoke to neighbor. Told him of
Bob's ~~CS~~ conclusion. He wants
action this fall.

11:15

Start drilling MW-11

12:00

At 7' hit some kind of cavity,
losing air circulation. Can not
continue. Will move rig & re-drill
hole.

12:15

Move 12 ft E-SE.

Void at bottom of old hole, difficult
to tell if in clay or rock. Perhaps
at base of berm.Marilyn Van Dort
"Rite in the Rain"

10-12-10

Martin Van Dant

- 1220 Setting up rig on new location
for MW-11, start drilling 1230
- 1340 Water at 75', drill to 80'
12 gpm.
- 1345 Suppleness and bore exit, will
leave hole open and move to next
location
- 1405 Rig taken down.
- 1420 Setting up at MW-12 location
west of MW-1 & MW-8.
- 1445 Pipe remains, unloading
- 1530 Head back to MW-11 to
install well
- 1620 Well in place, adding sand
- 1640 Adding bentonite
- 1645 Cut pipe & expose well grout
tomorrow
- 1655 Driller leaves.
- 1700 Leave site.

10-13-10

Martin Van Dant

- 820 Arrive on site.
- 835 Driller on site. Preparing to
drill at MW-12
- 855 Start Drilling
- 1205 Finishing TD = 105'±
- 1215 Preparing to install well.
- 1230 Start larger traverse pipe, Mark
going to get from shop
- 1235 Pulling MW-8, top 10ft at
4" PVC pulled, not attached to
rest of well. (not threaded). Lower
pipe section appears to be threaded.
- 1310 Installing MW-12
DTW 23'2"
TD 105'7"
- 1345 Well installed.
- 1355 Adding Sand
- 1410 Adding Bentonite
- 1415 Preparing to grout
- 1420 Grouting MW-12
- 1435 Grouting MW-8 bore hole
- 1440 Take down rig
- 1500 Preparing to grout MW-11
- 1520 Grouting MW-11

10-13-10

Mark Van Daele

1530 Graft pump plugged, needs to
repair

1605 Pump repaired

1635 Finished grafting MW-11

1640 Cleaning up

1655 Scout locations for riparians.
Mark will be at a meeting
tomorrow. Kirk will, borders
will start complete monitoring well
surface work.

1715 Dollars leave site

10-14-10

815 On site, brought cable saw

830 Kirk on site. Starting equipment

845 Preparing to pull MW-10R

850 Pulled steel casing. PVC is broken

off at base of steel. Will have

to dig out to plug

900 Dig out and sawed off PVC ~ 1.5 ft

below ground

915 Pulling steel & PVC at MW-7.

PVC broke off ~ 1 ft below top

of casing.

Screen
was

WVH

10-14-10

Mark Van Daele

930 Making grafts

945 Grafting MW-10R & MW-7

1015 Finished cleaning up

1025 Preparing to pull MW-4.

1035 Pulling MW-4, steel and top

PVC came together. Screen

left in place.

1040 Plug MW-4

1050 Clean up

1055 Preparing to finish MW-11.

1110 Cleaning up cuttings

1135 Constructing surface pad.

1220 Attaching well cap

1225 Cleaning up, finished at MW-11

1230 At MW-12

1235 Cleaning up cuttings.

1245 Preparing to finish well MW-12

1255 Constructing surface pad.

1320 Kirk going to get more Quickcrete

to finish pad.

1345 Start Developing MW-11, 2, 3, 4

1350 Kirk has finished pad at MW-12

Packing up materials & cleaning up

1415 Buck at MW-11

WVH

"Rite in the Rain"

1073-10

Martha Van Dant

1455 ~150 gallons pumped
 1525 ~220 gallons @ 2 gpm
 Water turns gray after
 surging, clears up with
 5 gallons.

1610 ~320 gal pumped
 Clears up very quickly after
 surging.

1625 Stop development
 ~350 gal pumped total

1640 Finished at MW-11, move
 to MW-12

1650 Set up at MW-12

1710 Start pumping ~1.8 gpm

1715 Pumped dry.

1720 Pump may have clogged, after
 surging flow is better.

1725 Stopped again. Can not
 sustain 1.8 gpm.

1730 Adjust to 1 gpm

1735 1.2 gpm

1740 Surgingly not as bad as first
 2 surges. Takes several minutes
 to clear up.

with

10-14-10

Martha Van Dant

1745 1.2 gpm surging
 Still takes a while to clear up
 after surging.

1750 Flow is steady at 1.2-1.3 gpm
 seems to be producing better as
 development continues.

1755 Stop development, well continues
 in morning.

1800 Leave site.

10-15-10

750 On site.

805 Restart development of MW-12.

812 Purged dry.

818 Restart surging

823 Dry. ~20 gal pumped today

830 Well not dry, pulled pump
 to drying nose problem

855 Restart purge

Well was not running dry.
 Pump motor was failing
 due to water leaking in. Replaced
 motor and O-rings

with

"Return the Rain"

10-15-10

Martin Van Dant

- 900 Making 175 gpm
 915 Recalibrate pH meter
 940 After surging water becomes slightly red in color. Takes ~3 min to clear up
 945 75 gallons pumped since repairing pumps ~150 gallons total
 955 Water slightly red for ~3 min after surging then very slightly gray for ~10 min
 1015 ~190 gal pumped total
 1020 Surged, very little red color. Gray color clears up after about 7 min
 1030 Surged, water clears up quickly. Very slightly gray for ~5 min
 1045 Stop development, 230 gal total
 1050 Packing up
 1115 Leave site.

10-25-10

Martin Van Dant

- 1015 Arrive on site
 Windy + snowing ~40°
 1030 Beginning with methane monitoring and gas levels
 1040 AT MW-SM & MW-S
 1057 AT MW-6M & MW-6
 1111 On top of landfill, walking to methane readings
 1125 AT MW-9R & MW-OW
 1140 AT MW-2
 1145 AT MW-11
 1151 AT MW-12 & MW-1
 1205 Lunch
 1240 Back on site
 1250 Set up at MW-9R
 1310 Start purging MW-9R
 1350 Purged dry, move to MW-OW
 1355 Set up at MW-OW
 1415 Start purging MW-OW
 1705 Sample MW-OW
 1720 Cleaning up
 1730 Leave site

10-26-10

Martin Van Oort

810 On site

815 At MW-9R to collect
sample.

845 Finished, clearing up.

855 At MW-11, setting up.

920 Start purging MW-11.

920 Sample MW-11

1215 Finished, clearing up.

1235 Lunch

1315 Back on site

1320 At MW-12, setting up

1355 Start purge.

1635 Getting dark, will have
to finish purge & sample
MW-12 tomorrow

1640 Clean up

1650 Leave site

10-27-10

Martin Van Oort

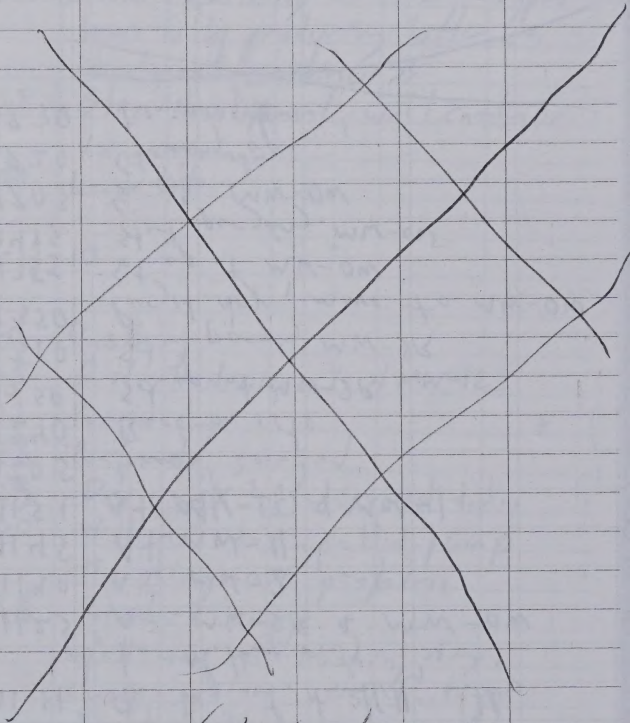
825 Arrive on site

830 At MW-12 to finish purging

910 Sampling MW-12 & MW-12-Dep

935 Finished, clearing up

1000 Leave site



Wt Hgt

"Return to the Rain"

Start
1345

MW-11

2-2.4 ppm

Methane Monitoring Form

2/26/10

	pH	SC
1430	6.42	0.64
1435	6.64	0.64
1440	6.45	0.64
1445	6.54	0.65
1455	1500	1505
1510	6.61	0.64
1620	6.66	0.64

~2.3 ppm

Surge

~2.3 ppm

Surge

Start
1710

MW-12

~1.8 ppm → 1.3 ppm at 1730

Stop 1755

~55 gal pumped on 10-14

Start 805 - 7.68 0.70

~1.5 ppm

Start 855

~1.75 ppm

900 7.24 0.69

905 7.68 0.70

Surge

910 7.69 0.70

1.35 ppm

Recal pH meter

925 7.45 0.69

930 7.45 0.68

Surge

1.5 ppm

940

Surge

950

Surge

1.2 ppm

1000

Surge

1020

Surge

1.3 ppm

1030

Surge

Methane Monitoring Form

Site Name: Master M Landfill

Date: 2/26/10

Personnel: Martin Van Oort

Field Conditions: Sunny 30's to 40's, snow cover, drifts to 2' culm

Meter Model: 6FE-6450

Calibration 4-2-10

Calibration Time: 10:50 Standard: 50 Pre-Reading: 53.5 Post-Reading: 50.5

Time: 1050

Standard: 50

Pre-Reading: _____

Post-Reading: 30/2

[illegible]

Notes: After Over Range reading at MW-SM^{Cell} sensor did not return to 0.

Collected 2/23/10

Calibration	P ₁	P ₂	Flooded	Bump test
O ₂	18.8	18.7	18.5	18.8
LEL	48.5	50.5	50	53.5
H ₂ S	18.2	20.2	20	18.8
CO	190	201	200	187

Signature: _____

Page of

Water Level Measurement Form

Site Name: Master M Landfill

Date: 2/26/10

Personnel: Martin Van Oort

Equipment: Slope Indicator, 300' water

Field Conditions: Sunny 30's to 40's, calm, snow cover, dirt to 2'

[illegible]

Notes: _____

Signature:

Methane Monitoring Form

Site Name: Master M Date: 6-21-10

Personnel: Markus Van Dant

Field Conditions: mostly cloudy, breezy, sprinkles

Meter Model: GF6-4SD

Calibration
Time: _____ Standard: _____ Pre-Reading: _____ Post-Reading: _____

[illegible]

Notes: * MW-SM: low oxygen prevented LEL sensor from working
LEL reading likely higher than actual

Signature: W. L. H.

Page 1 of 1

Water Level Measurement Form

Site Name: M. 370 M Date: 6-21-10

Personnel: Martin Van Dine Equipment: Slope indicator 300 ft

Field Conditions: Mostly cloudy, breezy, sprinkles

[illegible]

Notes: _____

Signature: [Signature] Page 1 of 1

Methane Monitoring Form

Site Name: Mist - M Landfill

Date: 10/25/10

Personnel: Mark Van Oort

Field Conditions: Windy, snow showers, 40's

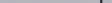
Meter Model: 6F6

Calibration

Time: _____ Standard: _____ Pre-Reading: _____ Post-Reading: _____

[illegible]

Notes:

Signature: 

Page 1 of 1

Water Level Measurement Form

Site Name: Master A landfill Date: 10/28/10

Personnel: Mark Van Oort Equipment: 2.0 VLF

Field Conditions: windy, snow showers, 40's

[illegible]

Notes:

Signature: W. H. H. Page 1 of 1

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Mark Van Oort Sample ID: M-M-MW-9R

Date: 10/25/10 Field Conditions: Windy, snow/rain mix, 40's

Condition of Well: Good

Depth to Water (DTW): 40.14 Total Depth of Well (TD): 50.49

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.69 Three Well Volumes: 5.06

Purge Equipment: Bailer Pump Depth: - Start Time: 1315

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1318	1			7.05	0.93	45.9				
1324	1.6			6.87	0.92	45.5				
1330	2.3			6.85	0.92	45.8				
1337	3.2			6.85	0.93	45.8				
1347	4.8			6.87	0.95	45.6				Dry
10/26 825			40.49							

Sample Time: 825 ^{10/26} Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO ₃	Dissolved Metals	
250mL Plastic	H ₂ SO ₄	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 5.2 gal Final Depth to Water: - End Time: 840

Notes: _____

Sampler Signature: WJH Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Master M Landfill Sample Location: MW-OW

Personnel: Mark Van Oort Sample ID: M-M-MW-OW

Date: 10/25/10 Field Conditions: Windy, cloudy, 40's

Condition of Well: No outer casing

Depth to Water (DTW): 27.93 Total Depth of Well (TD): ?

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: ? Three Well Volumes: ?

Purge Equipment: 3" PL Pump Depth: — Start Time: 1424

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1430	7			7.24	0.63	46.8				
1510	5			7.25	0.63	46.1				
1608	10			7.26	0.63	46.0				
1700	15			7.22	0.63	46.2				

Sample Time: 1725 Sampling Method: Grab

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO ₃	Dissolved Metals	
250mL Plastic	H ₂ SO ₄	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 15 Final Depth to Water: — End Time: 1720

Notes: _____

Sampler Signature: _____

Wt hht

Monitoring Well Purging and Sampling Form

Site Name: Mission M Landfill Sample Location: MW-11

Personnel: Mark Van Oort Sample ID: M-M-MW-11

Date: 10/26/10 Field Conditions: Snow, wind, 30's

Condition of Well: New

Depth to Water (DTW): 32.45 Total Depth of Well (TD): 82.89

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 8.22 Three Well Volumes: 24.66

Purge Equipment: Burton Pump Depth: — Start Time: 920

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
926	0.9			7.22	0.67	45.1				
958	8			7.19	0.63	45.3				
1025	11			7.12	0.64	46.4				
1059	16			7.16	0.63	46.9				
1128	21			7.13	0.64	46.5				
1152	25			7.13	0.63	46.1				

Sample Time: 1200 Sampling Method: Burton

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO ₃	Dissolved Metals	
250mL Plastic	H ₂ SO ₄	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 26 Final Depth to Water: — End Time: 1215

Notes: —

Sampler Signature: —

Monitoring Well Purging and Sampling Form

Site Name: Master M Landfill Sample Location: MW-12

Personnel: M. Van Dant Sample ID: M-M-MW-12

Date: 10/26/10 Field Conditions: Wind, snow, 40's

Condition of Well: New

Depth to Water (DTW): 1.93 Total Depth of Well (TD): 105.23

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 16.85 Three Well Volumes: 50.54

Purge Equipment: Bailer Pump Depth: - Start Time: 1355

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1405	1			6.93	0.67	46.2				
1420	6.5			6.87	0.67	47.4				
1449	16			8.44	0.67	46.7				
1520	26			7.44	0.67	46.5				
1602	36			-	0.68	46.3				
1630	45									
10/27 840	Restart Purge									
844	47			7.12	0.67	45.7				Getting stuck, finish purge & sample 10/27
857	51.5			7.00	0.67	45.3				

Sample Time: 910 10/27 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO ₃	Dissolved Metals	
250mL Plastic	H ₂ SO ₄	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 53 gal Final Depth to Water: - End Time: 935

Notes: pH probe failed, too cold?

Depth @ 915 10/27

Sampler Signature: [Signature]

APPENDIX C: HISTORICAL GROUNDWATER LEVELS

Table C-1: Historical Water Levels

Date	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-7R	MW-8	MW-9	MW-9R	MW-10	MW-10R	MW-11	MW-12	MW-OW
6/16/93	Dry	Dry	Dry	Dry	Dry	Dry		Dry							NM
10/14/94	NM	NM	NM	NM	NM	NM		NM	Dry		4155.69				NM
12/15/95	4154.12	Dry	Dry	4177.65	4160.64	4173.00		Dry	4140.77		4160.92				NM
3/28/96	4157.37	NM	NM	NM	NM	4176.51		NM	4139.43		4158.09				NM
11/29/05	4154.17	4174.1	NM	4181.82	Dry		Dry	4155.06		4159 ⁽¹⁾		4161 ⁽¹⁾			NM
12/18/07	Dry	Dry	Dry	4165.54	Dry		Dry	4155.04		4159 ⁽¹⁾		4164 ⁽¹⁾			4162 ⁽¹⁾
1/21/09	4153.12	Dry	NM	4165.75 ⁽²⁾	7 ⁽³⁾		4177 ⁽¹⁾⁽⁴⁾	NM		4159 ⁽¹⁾		4164 ⁽¹⁾			4163 ⁽¹⁾
6/1/09	NM	NM	NM	4172.02	NM		NM	NM		4163 ⁽¹⁾		4170 ⁽¹⁾			4170 ⁽¹⁾
10/26/09	NM	NM	NM	4165.23	NM		NM	NM		4160 ⁽¹⁾		4164 ⁽¹⁾			4163 ⁽¹⁾
2/26/10	NM	NM	Dry	4165.44	4160.07		4177 ⁽¹⁾	4154.52		4159 ⁽¹⁾		NM ⁽⁵⁾			4162 ⁽¹⁾
6/21/10	NM	NM	NM	4172.91	4171.36		4190 ⁽¹⁾	4169.97		4180 ⁽¹⁾		NM ⁽⁵⁾			4172 ⁽¹⁾
10/25/10	NM	NM		4169.50	4166.84					4161 ⁽¹⁾			4166 ⁽¹⁾	4168 ⁽¹⁾	4168 ⁽¹⁾

Notes:

NM = Not measured

■ = Well not present.

- (1) Reference elevation estimated from topographic contours (5ft) and field observations
- (2) Deeper than tape, 2 ft. of water in well, DTW calculated from TD recorded 12/18/07
- (3) Deeper than tape, DTW unknown
- (4) 3 in. of water in well, DTW calculated from TD
- (5) Well damaged, measurement not possible.

The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure C-1: Static Water Levels in Shallow Wells

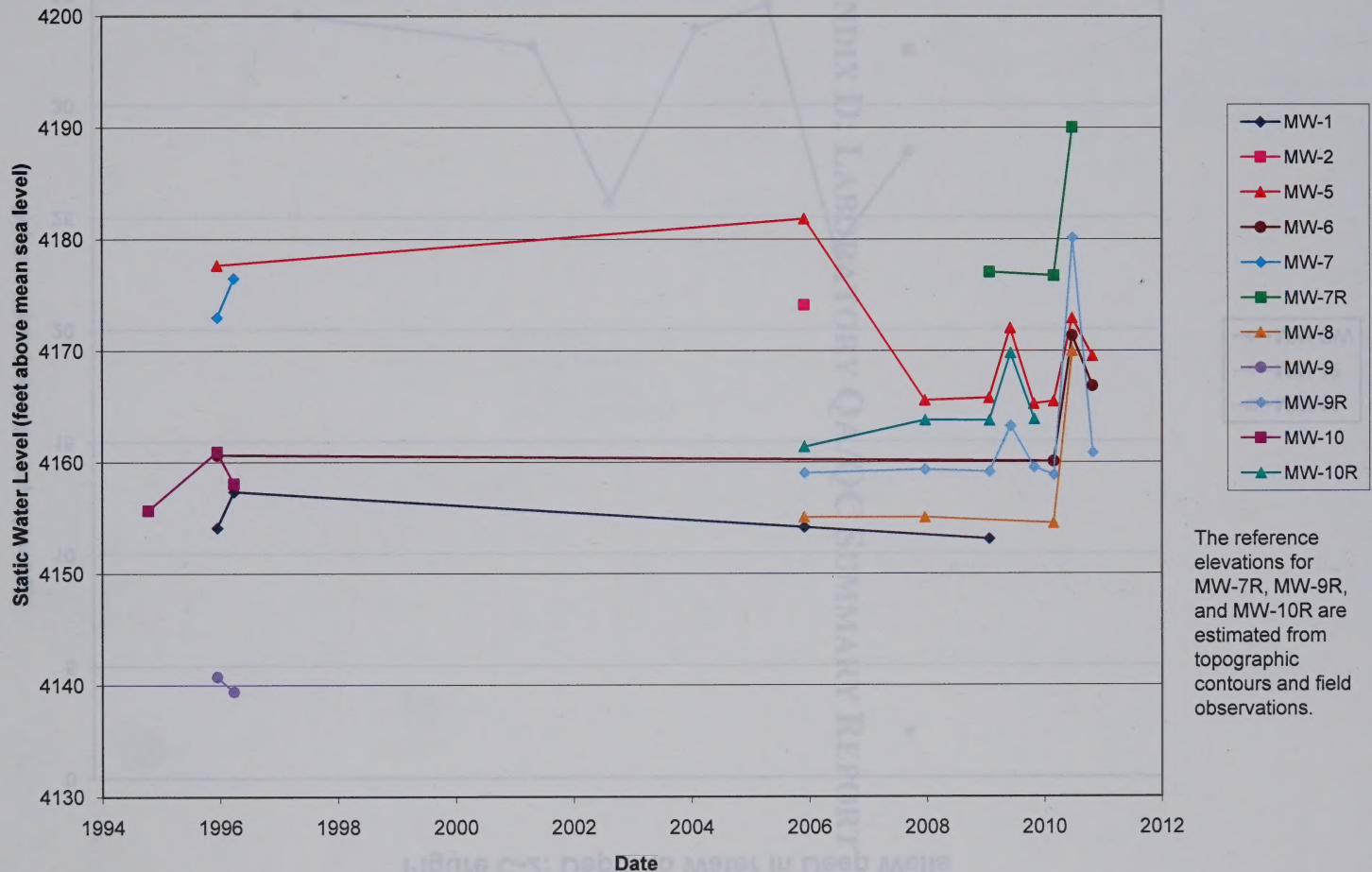


Figure C-2: Depth to Water in Deep Wells



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DEPT. OF ENVIRONMENTAL
HEALTH & NATURAL RESOURCES
MONTGOMERY COUNTY

INVOICE AND REPORT

APPENDIX D: LABORATORY QA/QC SUMMARY REPORT

MT (100)
Montana Water
100 New 20000
Chicago MT 59103

****INVOICE AND REPORT ****

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ANALYTICAL SUMMARY REPORT

November 21, 2010

MT DEQ

PO Box 200901

Helena, MT 59620-0901

Workorder No.: H10100425

Project Name: Mister M Landfill

Energy Laboratories Inc received the following 6 samples for MT DEQ on 10/27/2010 for analysis.

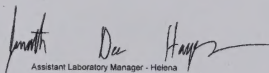
Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10100425-001	MrM-MW-OW	10/25/10 17:05	10/27/10	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H10100425-002	MrM-MW-9R	10/26/10 8:25	10/27/10	Aqueous	Same As Above
H10100425-003	MrM-MW-11	10/26/10 12:00	10/27/10	Aqueous	Same As Above
H10100425-004	MrM-MW-12	10/27/10 9:10	10/27/10	Aqueous	Same As Above
H10100425-005	MrM-MW-12-DUP	10/27/10 9:15	10/27/10	Aqueous	Same As Above
H10100425-006	TB 101210RTHCL1617 062110-3	10/25/10 17:05	10/27/10	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:


Assistant Laboratory Manager - Helena

Digitally signed by
Jon Hager

Date: 2010.11.21 13:40:59 -07:00

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-006
Client Sample ID TB 101210RTHCL1617 062110-3

Report Date: 11/21/10
Collection Date: 10/25/10 17:05
Date Received: 10/27/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 17:53 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 17:53 / abb
Benzene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 17:53 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 17:53 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 17:53 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Styrene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-006
Client Sample ID TB 101210RTHCL1617 062110-3

Report Date: 11/21/10
Collection Date: 10/25/10 17:05
Date Received: 10/27/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	11/02/10 17:53 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	11/02/10 17:53 / abb
Surr: Dibromofluoromethane	100	%REC		70-130		SW8260B	11/02/10 17:53 / abb
Surr: p-Bromofluorobenzene	103	%REC		70-130		SW8260B	11/02/10 17:53 / abb
Surr: Toluene-d8	108	%REC		70-130		SW8260B	11/02/10 17:53 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Analytical Run: COND_101101A
Sample ID: ICV2_101101A										11/01/10 11:44
Initial Calibration Verification Standard										
Conductivity		986	umhos/cm	1.0	99	90	110			
Sample ID: CCV3_101101A										11/01/10 13:16
Continuing Calibration Verification Standard										
Conductivity		1410	umhos/cm	1.0	100	90	110			
Method: A2510 B										Batch: 101101A-COND-PROBE-W
Sample ID: LCS1_101101A										11/01/10 11:45
Laboratory Control Sample										
Conductivity		1410	umhos/cm	1.0	100	90	110			
Sample ID: H10100425-004ADUP										11/01/10 13:34
Sample Duplicate										
Conductivity		678	umhos/cm	1.0				0.7	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B								Analytical Run: MAN-TECH_101029B		
Sample ID: CCV1-1631	Continuing Calibration Verification Standard									10/29/10 17:09
pH		3.94	s.u.	0.10	99	98	102			
Sample ID: CCV-1552	Continuing Calibration Verification Standard									10/29/10 17:12
pH		7.02	s.u.	0.10	100	98	102			
Sample ID: CCV2-1664	Continuing Calibration Verification Standard									10/29/10 17:15
pH		10.0	s.u.	0.10	100	98	102			
Sample ID: ICV-1632	Initial Calibration Verification Standard									10/29/10 17:18
pH		7.00	s.u.	0.10	100	99	101			
Method: A4500-H B								Batch: R66671		
Sample ID: H10100425-002ADUP	Sample Duplicate									10/29/10 17:53
pH		8.13	s.u.	0.10	Run: MAN-TECH_101029B			0.1	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101108A								
Sample ID: ICV STD		15 Initial Calibration Verification Standard								11/08/10 11:06
Antimony		0.0470	mg/L	0.050	94	90	110			
Arsenic		0.0488	mg/L	0.0050	98	90	110			
Barium		0.0479	mg/L	0.10	96	90	110			
Beryllium		0.0245	mg/L	0.0010	98	90	110			
Cadmium		0.0256	mg/L	0.0010	103	90	110			
Chromium		0.0491	mg/L	0.010	98	90	110			
Cobalt		0.0497	mg/L	0.010	99	90	110			
Copper		0.0503	mg/L	0.010	101	90	110			
Iron		0.258	mg/L	0.030	101	90	110			
Lead		0.0460	mg/L	0.010	92	90	110			
Nickel		0.0497	mg/L	0.010	99	90	110			
Selenium		0.0500	mg/L	0.0050	100	90	110			
Thallium		0.0480	mg/L	0.10	96	90	110			
Vanadium		0.0482	mg/L	0.10	96	90	110			
Zinc		0.0506	mg/L	0.010	101	90	110			
Sample ID: ICSA		15 Interference Check Sample A								11/08/10 11:10
Antimony		0.000650	mg/L	0.050						
Arsenic		0.000135	mg/L	0.0050						
Barium		0.000132	mg/L	0.10						
Beryllium		8.00E-06	mg/L	0.0010						
Cadmium		0.000535	mg/L	0.0010						
Chromium		0.000521	mg/L	0.010						
Cobalt		0.00166	mg/L	0.010						
Copper		0.00148	mg/L	0.010						
Iron		104	mg/L	0.030	104	70	130			
Lead		8.80E-05	mg/L	0.010						
Nickel		0.00113	mg/L	0.010						
Selenium		0.000125	mg/L	0.0050						
Thallium		1.30E-05	mg/L	0.10						
Vanadium		6.30E-05	mg/L	0.10						
Zinc		0.00125	mg/L	0.010						
Sample ID: ICSAB		15 Interference Check Sample AB								11/08/10 11:15
Antimony		0.000273	mg/L	0.050		0	0			
Arsenic		0.0106	mg/L	0.0050	106	70	130			
Barium		0.000133	mg/L	0.10		0	0			
Beryllium		5.00E-06	mg/L	0.0010		0	0			
Cadmium		0.0107	mg/L	0.0010	107	70	130			
Chromium		0.0211	mg/L	0.010	106	70	130			
Cobalt		0.0228	mg/L	0.010	114	70	130			
Copper		0.0219	mg/L	0.010	109	70	130			
Iron		103	mg/L	0.030	103	70	130			
Lead		7.50E-05	mg/L	0.010		0	0			
Nickel		0.0216	mg/L	0.010	108	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101108A								
Sample ID: ICSAB	15 Interference Check Sample AB									11/08/10 11:15
Selenium		0.0102	mg/L	0.0050	102	70	130			
Thallium		2.00E-06	mg/L	0.10		0	0			
Vanadium		0.0208	mg/L	0.10	104	70	130			
Zinc		0.0112	mg/L	0.010	112	70	130			
Sample ID: ICV STD	15 Initial Calibration Verification Standard									11/08/10 12:22
Antimony		0.0465	mg/L	0.050	93	90	110			
Arsenic		0.0489	mg/L	0.0050	98	90	110			
Barium		0.0482	mg/L	0.10	96	90	110			
Beryllium		0.0251	mg/L	0.0010	100	90	110			
Cadmium		0.0255	mg/L	0.0010	102	90	110			
Chromium		0.0494	mg/L	0.010	99	90	110			
Cobalt		0.0492	mg/L	0.010	98	90	110			
Copper		0.0506	mg/L	0.010	101	90	110			
Iron		0.256	mg/L	0.030	100	90	110			
Lead		0.0468	mg/L	0.010	94	90	110			
Nickel		0.0499	mg/L	0.010	100	90	110			
Selenium		0.0495	mg/L	0.0050	99	90	110			
Thallium		0.0493	mg/L	0.10	99	90	110			
Vanadium		0.0484	mg/L	0.10	97	90	110			
Zinc		0.0503	mg/L	0.010	101	90	110			
Sample ID: ICV STD	15 Initial Calibration Verification Standard									11/08/10 16:32
Antimony		0.0477	mg/L	0.050	95	90	110			
Arsenic		0.0491	mg/L	0.0050	98	90	110			
Barium		0.0487	mg/L	0.10	97	90	110			
Beryllium		0.0248	mg/L	0.0010	99	90	110			
Cadmium		0.0259	mg/L	0.0010	103	90	110			
Chromium		0.0497	mg/L	0.010	99	90	110			
Cobalt		0.0494	mg/L	0.010	99	90	110			
Copper		0.0507	mg/L	0.010	101	90	110			
Iron		0.266	mg/L	0.030	104	90	110			
Lead		0.0474	mg/L	0.010	95	90	110			
Nickel		0.0500	mg/L	0.010	100	90	110			
Selenium		0.0506	mg/L	0.0050	101	90	110			
Thallium		0.0493	mg/L	0.10	99	90	110			
Vanadium		0.0488	mg/L	0.10	98	90	110			
Zinc		0.0510	mg/L	0.010	102	90	110			
Sample ID: ICSA	15 Interference Check Sample A									11/08/10 16:36
Antimony		0.000504	mg/L	0.050						
Arsenic		0.000161	mg/L	0.0050						
Barium		0.000140	mg/L	0.10						
Beryllium		6.00E-06	mg/L	0.0010						
Cadmium		0.000374	mg/L	0.0010						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101108A								
Sample ID: ICSA		15 Interference Check Sample A								11/08/10 16:36
Chromium		0.000553	mg/L	0.010						
Cobalt		0.00166	mg/L	0.010						
Copper		0.00142	mg/L	0.010						
Iron		104	mg/L	0.030	104	70	130			
Lead		8.30E-05	mg/L	0.010						
Nickel		0.00113	mg/L	0.010						
Selenium		9.00E-05	mg/L	0.0050						
Thallium		1.80E-05	mg/L	0.10						
Vanadium		8.10E-05	mg/L	0.10						
Zinc		0.00112	mg/L	0.010						
Sample ID: ICSAB		15 Interference Check Sample AB								11/08/10 16:41
Antimony		0.000246	mg/L	0.050		0	0			
Arsenic		0.0107	mg/L	0.0050	107	70	130			
Barium		0.000140	mg/L	0.10		0	0			
Beryllium		5.00E-06	mg/L	0.0010		0	0			
Cadmium		0.0107	mg/L	0.0010	107	70	130			
Chromium		0.0209	mg/L	0.010	104	70	130			
Cobalt		0.0224	mg/L	0.010	112	70	130			
Copper		0.0215	mg/L	0.010	108	70	130			
Iron		103	mg/L	0.030	103	70	130			
Lead		7.10E-05	mg/L	0.010		0	0			
Nickel		0.0214	mg/L	0.010	107	70	130			
Selenium		0.0105	mg/L	0.0050	105	70	130			
Thallium		ND	mg/L	0.10		0	0			
Vanadium		0.0206	mg/L	0.10	103	70	130			
Zinc		0.0110	mg/L	0.010	110	70	130			
Sample ID: ICV STD		15 Initial Calibration Verification Standard								11/09/10 02:19
Antimony		0.0472	mg/L	0.050	94	90	110			
Arsenic		0.0487	mg/L	0.0050	97	90	110			
Barium		0.0476	mg/L	0.10	95	90	110			
Beryllium		0.0243	mg/L	0.0010	97	90	110			
Cadmium		0.0253	mg/L	0.0010	101	90	110			
Chromium		0.0495	mg/L	0.010	99	90	110			
Cobalt		0.0488	mg/L	0.010	98	90	110			
Copper		0.0508	mg/L	0.010	102	90	110			
Iron		0.270	mg/L	0.030	106	90	110			
Lead		0.0466	mg/L	0.010	93	90	110			
Nickel		0.0503	mg/L	0.010	101	90	110			
Selenium		0.0511	mg/L	0.0050	102	90	110			
Thallium		0.0486	mg/L	0.10	97	90	110			
Vanadium		0.0485	mg/L	0.10	97	90	110			
Zinc		0.0504	mg/L	0.010	101	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										
Analytical Run: ICPMS204-B_101108A										
Sample ID: ICSA	15	Interference Check Sample A								11/08/10 16:36
Chromium		0.000553	mg/L	0.010						
Cobalt		0.00166	mg/L	0.010						
Copper		0.00142	mg/L	0.010						
Iron		104	mg/L	0.030	104	70	130			
Lead		8.30E-05	mg/L	0.010						
Nickel		0.00113	mg/L	0.010						
Selenium		9.00E-05	mg/L	0.0050						
Thallium		1.80E-05	mg/L	0.10						
Vanadium		8.10E-05	mg/L	0.10						
Zinc		0.00112	mg/L	0.010						
Sample ID: ICSAB	15	Interference Check Sample AB								11/08/10 16:41
Antimony		0.000246	mg/L	0.050		0	0			
Arsenic		0.0107	mg/L	0.0050	107	70	130			
Barium		0.000140	mg/L	0.10		0	0			
Beryllium		5.00E-06	mg/L	0.0010		0	0			
Cadmium		0.0107	mg/L	0.0010	107	70	130			
Chromium		0.0209	mg/L	0.010	104	70	130			
Cobalt		0.0224	mg/L	0.010	112	70	130			
Copper		0.0215	mg/L	0.010	108	70	130			
Iron		103	mg/L	0.030	103	70	130			
Lead		7.10E-05	mg/L	0.010		0	0			
Nickel		0.0214	mg/L	0.010	107	70	130			
Selenium		0.0105	mg/L	0.0050	105	70	130			
Thallium		ND	mg/L	0.10		0	0			
Vanadium		0.0206	mg/L	0.10	103	70	130			
Zinc		0.0110	mg/L	0.010	110	70	130			
Sample ID: ICV STD	15	Initial Calibration Verification Standard								11/09/10 02:19
Antimony		0.0472	mg/L	0.050	94	90	110			
Arsenic		0.0487	mg/L	0.0050	97	90	110			
Barium		0.0476	mg/L	0.10	95	90	110			
Beryllium		0.0243	mg/L	0.0010	97	90	110			
Cadmium		0.0253	mg/L	0.0010	101	90	110			
Chromium		0.0495	mg/L	0.010	99	90	110			
Cobalt		0.0488	mg/L	0.010	98	90	110			
Copper		0.0508	mg/L	0.010	102	90	110			
Iron		0.270	mg/L	0.030	106	90	110			
Lead		0.0466	mg/L	0.010	93	90	110			
Nickel		0.0503	mg/L	0.010	101	90	110			
Selenium		0.0511	mg/L	0.0050	102	90	110			
Thallium		0.0486	mg/L	0.10	97	90	110			
Vanadium		0.0485	mg/L	0.10	97	90	110			
Zinc		0.0504	mg/L	0.010	101	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101108A								
Sample ID: ICSA		15 Interference Check Sample A								11/09/10 02:23
Antimony		0.000360	mg/L	0.050						
Arsenic		0.000193	mg/L	0.0050						
Barium		0.000132	mg/L	0.10						
Beryllium		1.20E-05	mg/L	0.0010						
Cadmium		0.000495	mg/L	0.0010						
Chromium		0.000575	mg/L	0.010						
Cobalt		0.00158	mg/L	0.010						
Copper		0.00140	mg/L	0.010						
Iron		104	mg/L	0.030	104	70	130			
Lead		8.50E-05	mg/L	0.010						
Nickel		0.00114	mg/L	0.010						
Selenium		0.000219	mg/L	0.0050						
Thallium		2.30E-05	mg/L	0.10						
Vanadium		8.80E-05	mg/L	0.10						
Zinc		0.00124	mg/L	0.010						
Sample ID: ICSAB		15 Interference Check Sample AB								11/09/10 02:28
Antimony		0.000199	mg/L	0.050		0	0			
Arsenic		0.0108	mg/L	0.0050	108	70	130			
Barium		0.000113	mg/L	0.10		0	0			
Beryllium		5.00E-06	mg/L	0.0010		0	0			
Cadmium		0.0106	mg/L	0.0010	106	70	130			
Chromium		0.0209	mg/L	0.010	105	70	130			
Cobalt		0.0222	mg/L	0.010	111	70	130			
Copper		0.0217	mg/L	0.010	109	70	130			
Iron		104	mg/L	0.030	104	70	130			
Lead		7.50E-05	mg/L	0.010		0	0			
Nickel		0.0217	mg/L	0.010	109	70	130			
Selenium		0.0104	mg/L	0.0050	104	70	130			
Thallium		1.50E-05	mg/L	0.10		0	0			
Vanadium		0.0206	mg/L	0.10	103	70	130			
Zinc		0.0109	mg/L	0.010	109	70	130			
Sample ID: ICV STD		15 Initial Calibration Verification Standard								11/09/10 13:53
Antimony		0.0473	mg/L	0.050	95	90	110			
Arsenic		0.0490	mg/L	0.0050	98	90	110			
Barium		0.0481	mg/L	0.10	96	90	110			
Beryllium		0.0245	mg/L	0.0010	98	90	110			
Cadmium		0.0254	mg/L	0.0010	102	90	110			
Chromium		0.0499	mg/L	0.010	100	90	110			
Cobalt		0.0494	mg/L	0.010	99	90	110			
Copper		0.0507	mg/L	0.010	101	90	110			
Iron		0.262	mg/L	0.030	103	90	110			
Lead		0.0462	mg/L	0.010	92	90	110			
Nickel		0.0504	mg/L	0.010	101	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101108A								
Sample ID: ICV STD		15 Initial Calibration Verification Standard								11/09/10 13:53
Selenium		0.0506	mg/L	0.0050	101	90	110			
Thallium		0.0476	mg/L	0.10	95	90	110			
Vanadium		0.0488	mg/L	0.10	98	90	110			
Zinc		0.0502	mg/L	0.010	100	90	110			
Sample ID: ICSA		15 Interference Check Sample A								11/09/10 13:57
Antimony		0.000359	mg/L	0.050						
Arsenic		0.000253	mg/L	0.0050						
Barium		0.000125	mg/L	0.10						
Beryllium		2.60E-05	mg/L	0.0010						
Cadmium		0.000393	mg/L	0.0010						
Chromium		0.000513	mg/L	0.010						
Cobalt		0.00162	mg/L	0.010						
Copper		0.00145	mg/L	0.010						
Iron		103	mg/L	0.030	103	70	130			
Lead		8.40E-05	mg/L	0.010						
Nickel		0.00113	mg/L	0.010						
Selenium		0.000127	mg/L	0.0050						
Thallium		2.50E-05	mg/L	0.10						
Vanadium		6.50E-05	mg/L	0.10						
Zinc		0.00116	mg/L	0.010						
Sample ID: ICSAB		15 Interference Check Sample AB								11/09/10 14:02
Antimony		0.000191	mg/L	0.050		0	0			
Arsenic		0.0106	mg/L	0.0050	106	70	130			
Barium		0.000134	mg/L	0.10		0	0			
Beryllium		1.40E-05	mg/L	0.0010		0	0			
Cadmium		0.0103	mg/L	0.0010	103	70	130			
Chromium		0.0208	mg/L	0.010	104	70	130			
Cobalt		0.0220	mg/L	0.010	110	70	130			
Copper		0.0214	mg/L	0.010	107	70	130			
Iron		101	mg/L	0.030	101	70	130			
Lead		7.00E-05	mg/L	0.010		0	0			
Nickel		0.0218	mg/L	0.010	109	70	130			
Selenium		0.00986	mg/L	0.0050	99	70	130			
Thallium		1.30E-05	mg/L	0.10		0	0			
Vanadium		0.0208	mg/L	0.10	104	70	130			
Zinc		0.0109	mg/L	0.010	109	70	130			
Method: E200.8		Batch: R66970								
Sample ID: ICB		15 Method Blank								Run: ICPMS204-B_101108A 11/08/10 13:12
Antimony		ND	mg/L	1E-05						
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	2E-05						
Beryllium		ND	mg/L	1E-05						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Batch: R66970								
Sample ID: ICB	15 Method Blank	Run: ICPMS204-B_101108A								11/08/10 13:12
Cadmium		ND	mg/L	1E-05						
Chromium		ND	mg/L	8E-05						
Cobalt		ND	mg/L	1E-05						
Copper		ND	mg/L	3E-05						
Iron		ND	mg/L	0.0002						
Lead		ND	mg/L	1E-05						
Nickel		ND	mg/L	7E-05						
Selenium		ND	mg/L	3E-05						
Thallium		ND	mg/L	2E-05						
Vanadium		ND	mg/L	2E-05						
Zinc		ND	mg/L	0.0006						
Sample ID: LFB	15 Laboratory Fortified Blank	Run: ICPMS204-B_101108A								11/08/10 13:17
Antimony		0.0495	mg/L	0.050	99	85	115			
Arsenic		0.0501	mg/L	0.0050	100	85	115			
Barium		0.0499	mg/L	0.10	100	85	115			
Beryllium		0.0501	mg/L	0.0010	100	85	115			
Cadmium		0.0494	mg/L	0.0010	99	85	115			
Chromium		0.0506	mg/L	0.010	101	85	115			
Cobalt		0.0493	mg/L	0.010	99	85	115			
Copper		0.0487	mg/L	0.010	97	85	115			
Iron		4.95	mg/L	0.030	99	85	115			
Lead		0.0504	mg/L	0.010	101	85	115			
Nickel		0.0493	mg/L	0.010	99	85	115			
Selenium		0.0494	mg/L	0.0050	99	85	115			
Thallium		0.0505	mg/L	0.10	101	85	115			
Vanadium		0.0507	mg/L	0.10	101	85	115			
Zinc		0.0502	mg/L	0.010	100	85	115			
Sample ID: H10100425-004BMS	15 Sample Matrix Spike	Run: ICPMS204-B_101108A								11/09/10 00:19
Antimony		0.0446	mg/L	0.0050	89	70	130			
Arsenic		0.0480	mg/L	0.0050	94	70	130			
Barium		0.0857	mg/L	0.10	88	70	130			
Beryllium		0.0452	mg/L	0.0010	90	70	130			
Cadmium		0.0435	mg/L	0.0010	87	70	130			
Chromium		0.0463	mg/L	0.010	93	70	130			
Cobalt		0.0465	mg/L	0.010	91	70	130			
Copper		0.0442	mg/L	0.010	88	70	130			
Iron		4.93	mg/L	0.030	92	70	130			
Lead		0.0444	mg/L	0.010	89	70	130			
Nickel		0.0464	mg/L	0.010	89	70	130			
Selenium		0.0466	mg/L	0.0050	93	70	130			
Thallium		0.0445	mg/L	0.0050	89	70	130			
Vanadium		0.0465	mg/L	0.10	93	70	130			
Zinc		0.0478	mg/L	0.010	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R66970
Sample ID: H10100425-004BMS	15	Sample Matrix Spike			Run: ICPMS204-B_101108A				11/09/10 00:19	
Sample ID: H10100425-004BMSD	15	Sample Matrix Spike Duplicate			Run: ICPMS204-B_101108A				11/09/10 00:24	
Antimony		0.0445	mg/L	0.0050	89	70	130	0.1	20	
Arsenic		0.0481	mg/L	0.0050	94	70	130	0.3	20	
Barium		0.0840	mg/L	0.10	84	70	130		20	
Beryllium		0.0444	mg/L	0.0010	89	70	130	1.9	20	
Cadmium		0.0431	mg/L	0.0010	86	70	130	0.8	20	
Chromium		0.0463	mg/L	0.010	93	70	130	0.0	20	
Cobalt		0.0468	mg/L	0.010	91	70	130	0.7	20	
Copper		0.0443	mg/L	0.010	88	70	130	0.2	20	
Iron		4.92	mg/L	0.030	92	70	130	0.2	20	
Lead		0.0444	mg/L	0.010	89	70	130	0.0	20	
Nickel		0.0463	mg/L	0.010	89	70	130	0.3	20	
Selenium		0.0466	mg/L	0.0050	93	70	130	0.0	20	
Thallium		0.0442	mg/L	0.0050	88	70	130	0.7	20	
Vanadium		0.0464	mg/L	0.10	93	70	130		20	
Zinc		0.0486	mg/L	0.010	92	70	130	1.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8		Analytical Run: ICPMS204-B_101110B								
Sample ID: ICV STD	5	Initial Calibration Verification Standard								11/10/10 19:36
Barium		0.0498	mg/L	0.10	100	90	110			
Cadmium		0.0263	mg/L	0.0010	105	90	110			
Lead		0.0473	mg/L	0.010	95	90	110			
Silver		0.0258	mg/L	0.0050	103	90	110			
Thallium		0.0500	mg/L	0.10	100	90	110			
Sample ID: ICSA	5	Interference Check Sample A								11/10/10 19:39
Barium		0.000122	mg/L	0.10						
Cadmium		0.000510	mg/L	0.0010						
Lead		0.000100	mg/L	0.010						
Silver		0.000319	mg/L	0.0050						
Thallium		7.50E-05	mg/L	0.10						
Sample ID: ICSAB	5	Interference Check Sample AB								11/10/10 19:42
Barium		0.000151	mg/L	0.10		0	0			
Cadmium		0.0102	mg/L	0.0010	102	70	130			
Lead		0.000128	mg/L	0.010		0	0			
Silver		0.0196	mg/L	0.0050	98	70	130			
Thallium		7.30E-05	mg/L	0.10		0	0			
Sample ID: ICV STD	5	Initial Calibration Verification Standard								11/11/10 00:58
Barium		0.0493	mg/L	0.10	99	90	110			
Cadmium		0.0262	mg/L	0.0010	105	90	110			
Lead		0.0476	mg/L	0.010	95	90	110			
Silver		0.0255	mg/L	0.0050	102	90	110			
Thallium		0.0502	mg/L	0.10	100	90	110			
Sample ID: ICSA	5	Interference Check Sample A								11/11/10 01:01
Barium		0.000168	mg/L	0.10						
Cadmium		0.000546	mg/L	0.0010						
Lead		0.000153	mg/L	0.010						
Silver		0.000360	mg/L	0.0050						
Thallium		0.000103	mg/L	0.10						
Sample ID: ICSAB	5	Interference Check Sample AB								11/11/10 01:04
Barium		0.000161	mg/L	0.10		0	0			
Cadmium		0.00996	mg/L	0.0010	100	70	130			
Lead		0.000121	mg/L	0.010		0	0			
Silver		0.0193	mg/L	0.0050	96	70	130			
Thallium		7.80E-05	mg/L	0.10		0	0			
Sample ID: ICV STD	5	Initial Calibration Verification Standard								11/11/10 09:57
Barium		0.0499	mg/L	0.10	100	90	110			
Cadmium		0.0262	mg/L	0.0010	105	90	110			
Lead		0.0481	mg/L	0.010	96	90	110			
Silver		0.0258	mg/L	0.0050	103	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										
Sample ID: ICV STD										
5 Initial Calibration Verification Standard										
Thallium		0.0509	mg/L	0.10	102	90	110			11/11/10 09:57
Method: E200.8										
Sample ID: ICB										
5 Method Blank										
Run: ICPMS204-B_101110B										
Barium		4E-05	mg/L	2E-05						Batch: R67099
Cadmium		ND	mg/L	1E-05						11/10/10 19:59
Lead		1E-05	mg/L	1E-05						
Silver		7E-05	mg/L	2E-05						
Thallium		ND	mg/L	2E-05						
Sample ID: LFB										
5 Laboratory Fortified Blank										
Run: ICPMS204-B_101110B										
Barium		0.0477	mg/L	0.10	95	85	115			11/10/10 20:02
Cadmium		0.0480	mg/L	0.0010	96	85	115			
Lead		0.0478	mg/L	0.010	96	85	115			
Silver		0.0193	mg/L	0.0050	96	85	115			
Thallium		0.0472	mg/L	0.10	94	85	115			
Sample ID: H10100339-001BMS										
5 Sample Matrix Spike										
Run: ICPMS204-B_101110B										
Barium		0.328	mg/L	0.10	83	70	130			11/10/10 21:28
Cadmium		0.0952	mg/L	0.0010	95	70	130			
Lead		0.0981	mg/L	0.010	95	70	130			
Silver		0.0380	mg/L	0.0050	95	70	130			
Thallium		0.0942	mg/L	0.0050	94	70	130			
Sample ID: H10100339-001BMSD										
5 Sample Matrix Spike Duplicate										
Run: ICPMS204-B_101110B										
Barium		0.329	mg/L	0.10	84	70	130	0.2	20	11/10/10 21:31
Cadmium		0.0951	mg/L	0.0010	95	70	130	0.0	20	
Lead		0.0979	mg/L	0.010	95	70	130	0.2	20	
Silver		0.0390	mg/L	0.0050	97	70	130	2.5	20	
Thallium		0.0930	mg/L	0.0050	93	70	130	1.3	20	
Sample ID: H10100427-012EMS										
5 Sample Matrix Spike										
Run: ICPMS204-B_101110B										
Barium		0.0452	mg/L	0.10	90	70	130			11/10/10 22:38
Cadmium		0.0457	mg/L	0.0010	91	70	130			
Lead		0.0450	mg/L	0.010	90	70	130			
Silver		0.0181	mg/L	0.0050	90	70	130			
Thallium		0.0444	mg/L	0.0050	89	70	130			
Sample ID: H10100427-012EMSD										
5 Sample Matrix Spike Duplicate										
Run: ICPMS204-B_101110B										
Barium		0.0450	mg/L	0.10	90	70	130			11/10/10 22:41
Cadmium		0.0458	mg/L	0.0010	92	70	130	0.1	20	
Lead		0.0447	mg/L	0.010	89	70	130	0.8	20	
Silver		0.0180	mg/L	0.0050	90	70	130	0.4	20	
Thallium		0.0439	mg/L	0.0050	88	70	130	1.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R67099
Sample ID: H10110089-006BMS	5	Sample Matrix Spike		Run: ICPMS204-B_101110B						11/10/10 23:54
Barium		0.0721	mg/L	0.10	96	70	130			
Cadmium		0.0470	mg/L	0.0010	94	70	130			
Lead		0.0474	mg/L	0.010	95	70	130			
Silver		0.0172	mg/L	0.0050	86	70	130			
Thallium		0.0468	mg/L	0.0050	94	70	130			
Sample ID: H10110089-006BMSD	5	Sample Matrix Spike Duplicate		Run: ICPMS204-B_101110B						11/10/10 23:57
Barium		0.0721	mg/L	0.10	96	70	130		20	
Cadmium		0.0469	mg/L	0.0010	94	70	130	0.1	20	
Lead		0.0475	mg/L	0.010	95	70	130	0.3	20	
Silver		0.0170	mg/L	0.0050	85	70	130	1.1	20	
Thallium		0.0472	mg/L	0.0050	94	70	130	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										
Analytical Run: IC101-H_101101A										
Sample ID: ICV110110-12	2	Initial Calibration Verification Standard								
Chloride		100	mg/L	1.0	100	90	110			11/01/10 16:43
Sulfate		400	mg/L	1.0	101	90	110			
Sample ID: CCV-110110-30	2	Continuing Calibration Verification Standard								
Chloride		100	mg/L	1.0	102	90	110			11/01/10 21:39
Sulfate		400	mg/L	1.0	101	90	110			
Sample ID: CCV-110110-44	2	Continuing Calibration Verification Standard								
Chloride		100	mg/L	1.0	101	90	110			11/02/10 01:28
Sulfate		400	mg/L	1.0	100	90	110			
Method: E300.0										
Batch: R66706										
Sample ID: ICB110110-13	2	Method Blank								
Chloride		ND	mg/L	0.2						Run: IC101-H_101101A 11/01/10 16:59
Sulfate		ND	mg/L	0.5						
Sample ID: LFB110110-14	2	Laboratory Fortified Blank								
Chloride		50	mg/L	1.0	101	90	110			Run: IC101-H_101101A 11/01/10 17:16
Sulfate		200	mg/L	1.1	100	90	110			
Sample ID: H10100407-014AMS	2	Sample Matrix Spike								
Chloride		55	mg/L	1.0	105	90	110			Run: IC101-H_101101A 11/01/10 23:34
Sulfate		220	mg/L	1.1	106	90	110			
Sample ID: H10100407-014AMSD	2	Sample Matrix Spike Duplicate								
Chloride		55	mg/L	1.0	104	90	110	1.0	20	Run: IC101-H_101101A 11/01/10 23:50
Sulfate		220	mg/L	1.1	104	90	110	1.7	20	
Sample ID: H10100425-004AMS	2	Sample Matrix Spike								
Chloride		60	mg/L	1.0	110	90	110			Run: IC101-H_101101A 11/02/10 02:34
Sulfate		280	mg/L	1.1	123	90	110			
Sample ID: H10100425-004AMSD	2	Sample Matrix Spike Duplicate								
Chloride		63	mg/L	1.0	116	90	110	4.7	20	Run: IC101-H_101101A 11/02/10 02:51
Sulfate		310	mg/L	1.1	138	90	110	10	20	S

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										Analytical Run: IC101-H_101102A
Sample ID: ICV110210-12	2	Initial Calibration Verification Standard								11/02/10 15:55
Chloride		100	mg/L	1.0	101	90	110			
Sulfate		400	mg/L	1.0	101	90	110			
Sample ID: CCV-110210-72	2	Continuing Calibration Verification Standard								11/03/10 08:04
Chloride		100	mg/L	1.0	102	90	110			
Sulfate		400	mg/L	1.0	101	90	110			
Method: E300.0										Batch: R66805
Sample ID: ICB110210-13	2	Method Blank								Run: IC101-H_101102A 11/02/10 16:12
Chloride		ND	mg/L	0.2						
Sulfate		ND	mg/L	0.5						
Sample ID: LFB110210-14	2	Laboratory Fortified Blank								Run: IC101-H_101102A 11/02/10 16:28
Chloride		49	mg/L	1.0	98	90	110			
Sulfate		200	mg/L	1.1	98	90	110			
Sample ID: H10100437-013AMS	2	Sample Matrix Spike								Run: IC101-H_101102A 11/03/10 09:43
Chloride		56	mg/L	1.0	99	90	110			
Sulfate		250	mg/L	1.1	100	90	110			
Sample ID: H10100437-013AMSD	2	Sample Matrix Spike Duplicate								Run: IC101-H_101102A 11/03/10 09:59
Chloride		59	mg/L	1.0	104	90	110	4.5	20	
Sulfate		260	mg/L	1.1	105	90	110	3.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2										
Analytical Run: NUTRIENTS_101028A										
Sample ID: ICV-1	Initial Calibration Verification Standard									
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.050	104	90	110			10/28/10 13:10
Sample ID: ICB	Initial Calibration Blank, Instrument Blank									
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.050		0	0			10/28/10 13:20
Sample ID: CCV-33	Continuing Calibration Verification Standard									
Nitrogen, Nitrate+Nitrite as N		0.520	mg/L	0.050	104	90	110			10/28/10 14:14
Method: E353.2										
Batch: A2010-10-28_5_NO3_01										
Sample ID: LCS-2	Laboratory Control Sample									
Nitrogen, Nitrate+Nitrite as N		17.8	mg/L	0.10	97	90	110			10/28/10 13:12
Sample ID: LFB-3	Laboratory Fortified Blank									
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.050	104	90	110			10/28/10 13:14
Sample ID: MBLK-7	Method Blank									
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.006						10/28/10 13:21
Sample ID: H10100425-005CMS	Sample Matrix Spike									
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.050	102	90	110			10/28/10 14:26
Sample ID: H10100425-005CMSD	Sample Matrix Spike Duplicate									
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.050	104	90	110	1.9	20	10/28/10 14:28

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R66787
Sample ID: CCV110210B										11/02/10 12:07
54 Continuing Calibration Verification Standard										
Acetone		48.0	ug/L	20	96	70	130			
Acrylonitrile		43.6	ug/L	20	87	70	130			
Benzene		4.56	ug/L	1.0	91	70	130			
Bromochloromethane		6.40	ug/L	1.0	128	70	130			
Bromodichloromethane		4.92	ug/L	1.0	98	70	130			
Bromoform		5.24	ug/L	1.0	105	70	130			
Bromomethane		4.60	ug/L	1.0	92	70	130			
Carbon disulfide		4.80	ug/L	1.0	96	70	130			
Carbon tetrachloride		4.72	ug/L	1.0	94	70	130			
Chlorobenzene		4.80	ug/L	1.0	96	70	130			
Chlorodibromomethane		4.72	ug/L	1.0	94	70	130			
Chloroethane		4.40	ug/L	1.0	88	70	130			
Chloroform		5.44	ug/L	1.0	109	80	120			
Chloromethane		5.00	ug/L	1.0	100	70	130			
1,2-Dibromo-3-chloropropane		4.72	ug/L	1.0	94	70	130			
1,2-Dibromoethane		4.36	ug/L	1.0	87	70	130			
Dibromomethane		4.64	ug/L	1.0	93	70	130			
1,2-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
1,4-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
trans-1,4-Dichloro-2-butene		4.76	ug/L	1.0	95	70	130			
Dichlorodifluoromethane		4.24	ug/L	1.0	85	70	130			
1,1-Dichloroethane		4.76	ug/L	1.0	95	70	130			
1,2-Dichloroethane		4.44	ug/L	1.0	89	70	130			
1,1-Dichloroethene		4.96	ug/L	1.0	99	80	120			
cis-1,2-Dichloroethene		5.00	ug/L	1.0	100	70	130			
trans-1,2-Dichloroethene		4.76	ug/L	1.0	95	70	130			
1,2-Dichloropropane		4.76	ug/L	1.0	95	80	120			
cis-1,3-Dichloropropene		4.76	ug/L	1.0	95	70	130			
trans-1,3-Dichloropropene		4.72	ug/L	1.0	94	70	130			
Ethylbenzene		5.16	ug/L	1.0	103	80	120			
2-Hexanone		43.2	ug/L	20	86	70	130			
Iodomethane		4.60	ug/L	1.0	92	70	130			
Methyl ethyl ketone		48.4	ug/L	20	97	70	130			
Methyl isobutyl ketone		41.6	ug/L	20	83	70	130			
Methylene chloride		4.64	ug/L	1.0	93	70	130			
Styrene		4.88	ug/L	1.0	98	70	130			
1,1,1,2-Tetrachloroethane		4.76	ug/L	1.0	95	70	130			
1,1,2,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
Tetrachloroethene		4.96	ug/L	1.0	99	70	130			
Toluene		4.84	ug/L	1.0	97	80	120			
1,1,1-Trichloroethane		6.12	ug/L	1.0	122	70	130			
1,1,2-Trichloroethane		4.76	ug/L	1.0	95	70	130			
Trichloroethene		4.52	ug/L	1.0	90	70	130			
Trichlorofluoromethane		5.00	ug/L	1.0	100	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										
Sample ID: CCV110210B 54 Continuing Calibration Verification Standard										
Analytical Run: R66787										
11/02/10 12:07										
1,2,3-Trichloropropane		4.60	ug/L	1.0	92	70	130			
Vinyl acetate		5.04	ug/L	1.0	101	70	130			
Vinyl chloride		4.72	ug/L	1.0	94	80	120			
m+p-Xylenes		10.2	ug/L	1.0	102	70	130			
o-Xylene		4.92	ug/L	1.0	98	70	130			
Xylenes, Total		15.2	ug/L	1.0	101	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	94	70	130			
Surr: Dibromofluoromethane				1.0	99	70	130			
Surr: p-Bromofluorobenzene				1.0	105	70	130			
Surr: Toluene-d8				1.0	101	70	130			

Method: SW8260B										
Sample ID: LCS110210A 54 Laboratory Control Sample										
Run: 1SATURN_101102B										
Batch: R66787										
11/02/10 12:51										
Acetone		41.6	ug/L	20	83	70	130			
Acrylonitrile		45.2	ug/L	20	90	70	130			
Benzene		4.72	ug/L	1.0	94	70	130			
Bromochloromethane		5.68	ug/L	1.0	114	70	130			
Bromodichloromethane		5.08	ug/L	1.0	102	70	130			
Bromoform		5.48	ug/L	1.0	110	70	130			
Bromomethane		4.96	ug/L	1.0	99	70	130			
Carbon disulfide		4.80	ug/L	1.0	96	70	130			
Carbon tetrachloride		4.88	ug/L	1.0	98	70	130			
Chlorobenzene		4.84	ug/L	1.0	97	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.80	ug/L	1.0	96	70	130			
Chloroform		5.72	ug/L	1.0	114	70	130			
Chloromethane		5.32	ug/L	1.0	106	70	130			
1,2-Dibromo-3-chloropropane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromoethane		4.56	ug/L	1.0	91	70	130			
Dibromomethane		4.68	ug/L	1.0	94	70	130			
1,2-Dichlorobenzene		4.56	ug/L	1.0	91	70	130			
1,4-Dichlorobenzene		4.96	ug/L	1.0	99	70	130			
trans-1,4-Dichloro-2-butene		5.04	ug/L	1.0	101	70	130			
Dichlorodifluoromethane		5.16	ug/L	1.0	103	70	130			
1,1-Dichloroethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichloroethane		4.68	ug/L	1.0	94	70	130			
1,1-Dichloroethene		4.96	ug/L	1.0	99	70	130			
cis-1,2-Dichloroethene		4.88	ug/L	1.0	98	70	130			
trans-1,2-Dichloroethene		4.80	ug/L	1.0	96	70	130			
1,2-Dichloropropane		5.04	ug/L	1.0	101	70	130			
cis-1,3-Dichloropropene		5.04	ug/L	1.0	101	70	130			
trans-1,3-Dichloropropene		4.92	ug/L	1.0	98	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	70	130			
2-Hexanone		42.4	ug/L	20	85	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R66787
Sample ID: LCS110210A	54	Laboratory Control Sample				Run: 1SATURN_101102B				11/02/10 12:51
Iodomethane		4.24	ug/L	1.0	85	70	130			
Methyl ethyl ketone		44.0	ug/L	20	88	70	130			
Methyl isobutyl ketone		40.8	ug/L	20	82	70	130			
Methylene chloride		4.64	ug/L	1.0	93	70	130			
Styrene		5.08	ug/L	1.0	102	70	130			
1,1,1,2-Tetrachloroethane		4.96	ug/L	1.0	99	70	130			
1,1,2,2-Tetrachloroethane		4.68	ug/L	1.0	94	70	130			
Tetrachloroethene		5.08	ug/L	1.0	102	70	130			
Toluene		5.04	ug/L	1.0	101	70	130			
1,1,1-Trichloroethane		6.32	ug/L	1.0	126	70	130			
1,1,2-Trichloroethane		4.96	ug/L	1.0	99	70	130			
Trichloroethene		4.84	ug/L	1.0	97	70	130			
Trichlorofluoromethane		4.72	ug/L	1.0	94	70	130			
1,2,3-Trichloropropane		6.36	ug/L	1.0	127	70	130			
Vinyl acetate		4.48	ug/L	1.0	90	70	130			
Vinyl chloride		5.08	ug/L	1.0	102	70	130			
m+p-Xylenes		10.5	ug/L	1.0	105	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		15.6	ug/L	1.0	104	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	95	70	130			
Surr: Dibromofluoromethane				1.0	98	70	130			
Surr: p-Bromofluorobenzene				1.0	104	70	130			
Surr: Toluene-d8				1.0	108	70	130			
Sample ID: MB110210A										Run: 1SATURN_101102B
Acetone	54	ND	ug/L	20						11/02/10 13:51
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R66787
Sample ID: MB110210A	54	Method Blank					Run: 1SATURN_101102B			11/02/10 13:51
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	97	70	130			
Surr: Dibromofluoromethane				1.0	102	70	130			
Surr: p-Bromofluorobenzene				1.0	105	70	130			
Surr: Toluene-d8				1.0	109	70	130			
Sample ID: H10100425-001DMS	54	Sample Matrix Spike					Run: 1SATURN_101102B			11/02/10 21:52
Acetone		80.8	ug/L	40	81	70	130			
Acrylonitrile		87.2	ug/L	40	87	70	130			
Benzene		10.5	ug/L	2.0	97	70	130			
Bromochloromethane		7.00	ug/L	2.0	70	70	130			
Bromodichloromethane		11.2	ug/L	2.0	112	70	130			
Bromoform		10.8	ug/L	2.0	108	70	130			
Bromomethane		9.44	ug/L	2.0	94	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ
Project: Mister M Landfill

Report Date: 11/21/10
Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R66787
Sample ID: H10100425-001DMS	54	Sample Matrix Spike		Run: 1SATURN_101102B		11/02/10 21:52				
Carbon disulfide		9.60	ug/L	2.0	96	70	130			
Carbon tetrachloride		9.44	ug/L	2.0	94	70	130			
Chlorobenzene		10.0	ug/L	2.0	100	70	130			
Chlorodibromomethane		10.1	ug/L	2.0	101	70	130			
Chloroethane		8.24	ug/L	2.0	82	70	130			
Chloroform		9.76	ug/L	2.0	98	70	130			
Chloromethane		9.60	ug/L	2.0	96	70	130			
1,2-Dibromo-3-chloropropane		9.12	ug/L	2.0	91	70	130			
1,2-Dibromoethane		9.60	ug/L	2.0	96	70	130			
Dibromomethane		10.4	ug/L	2.0	104	70	130			
1,2-Dichlorobenzene		9.44	ug/L	2.0	94	70	130			
1,4-Dichlorobenzene		9.68	ug/L	2.0	97	70	130			
trans-1,4-Dichloro-2-butene		8.48	ug/L	2.0	85	70	130			
Dichlorodifluoromethane		9.68	ug/L	2.0	97	70	130			
1,1-Dichloroethane		9.04	ug/L	2.0	90	70	130			
1,2-Dichloroethane		9.28	ug/L	2.0	93	70	130			
1,1-Dichloroethene		9.52	ug/L	2.0	95	70	130			
cis-1,2-Dichloroethene		26.2	ug/L	2.0	67	70	130			S
trans-1,2-Dichloroethene		9.28	ug/L	2.0	93	70	130			
1,2-Dichloropropane		10.3	ug/L	2.0	103	70	130			
cis-1,3-Dichloropropene		10.9	ug/L	2.0	109	70	130			
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130			
Ethylbenzene		10.4	ug/L	2.0	88	70	130			
2-Hexanone		91.2	ug/L	40	91	70	130			
Iodomethane		8.80	ug/L	2.0	88	70	130			
Methyl ethyl ketone		86.4	ug/L	40	86	70	130			
Methyl isobutyl ketone		90.4	ug/L	40	90	70	130			
Methylene chloride		8.56	ug/L	2.0	86	70	130			
Styrene		10.7	ug/L	2.0	89	70	130			
1,1,1,2-Tetrachloroethane		10.2	ug/L	2.0	102	70	130			
1,1,2,2-Tetrachloroethane		9.84	ug/L	2.0	98	70	130			
Tetrachloroethene		10.9	ug/L	2.0	109	70	130			
Toluene		10.3	ug/L	2.0	103	70	130			
1,1,1-Trichloroethane		9.52	ug/L	2.0	95	70	130			
1,1,2-Trichloroethane		10.3	ug/L	2.0	103	70	130			
Trichloroethene		10.1	ug/L	2.0	101	70	130			
Trichlorofluoromethane		8.88	ug/L	2.0	89	70	130			
1,2,3-Trichloropropane		10.6	ug/L	2.0	106	70	130			
Vinyl acetate		7.50	ug/L	2.0	75	70	130			
Vinyl chloride		9.36	ug/L	2.0	88	70	130			
m+p-Xylenes		20.9	ug/L	2.0	102	70	130			
o-Xylene		10.6	ug/L	2.0	106	70	130			
Xylenes, Total		31.4	ug/L	2.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	92	70	130			

Qualifiers:

RL - Analyte reporting limit.
S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R66787
Sample ID: H10100425-001DMS	54	Sample Matrix Spike		Run: 1SATURN_101102B						11/02/10 21:52
Surr: Dibromofluoromethane				2.0	97	70	130			
Surr: p-Bromofluorobenzene				2.0	107	70	130			
Surr: Toluene-d8				2.0	113	70	130			
Sample ID: H10100425-001DMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_101102B						11/02/10 22:22
Acetone		87.2	ug/L	40	87	70	130	7.6	20	
Acrylonitrile		86.4	ug/L	40	86	70	130	0.9	20	
Benzene		9.60	ug/L	2.0	89	70	130	8.8	20	
Bromochloromethane		5.74	ug/L	2.0	57	70	130	20	20	S
Bromodichloromethane		10.2	ug/L	2.0	102	70	130	9.0	20	
Bromoform		9.76	ug/L	2.0	98	70	130	10	20	
Bromomethane		8.72	ug/L	2.0	87	70	130	7.9	20	
Carbon disulfide		8.88	ug/L	2.0	89	70	130	7.8	20	
Carbon tetrachloride		9.28	ug/L	2.0	93	70	130	1.7	20	
Chlorobenzene		9.84	ug/L	2.0	98	70	130	1.6	20	
Chlorodibromomethane		9.92	ug/L	2.0	99	70	130	1.6	20	
Chloroethane		7.90	ug/L	2.0	79	70	130	4.3	20	
Chloroform		9.28	ug/L	2.0	93	70	130	5.0	20	
Chloromethane		9.44	ug/L	2.0	94	70	130	1.7	20	
1,2-Dibromo-3-chloropropane		8.40	ug/L	2.0	84	70	130	8.2	20	
1,2-Dibromoethane		9.28	ug/L	2.0	93	70	130	3.4	20	
Dibromomethane		10.0	ug/L	2.0	100	70	130	3.9	20	
1,2-Dichlorobenzene		8.96	ug/L	2.0	90	70	130	5.2	20	
1,4-Dichlorobenzene		9.92	ug/L	2.0	99	70	130	2.4	20	
trans-1,4-Dichloro-2-butene		9.52	ug/L	2.0	95	70	130	12	20	
Dichlorodifluoromethane		9.12	ug/L	2.0	91	70	130	6.0	20	
1,1-Dichloroethane		8.64	ug/L	2.0	86	70	130	4.5	20	
1,2-Dichloroethane		8.88	ug/L	2.0	89	70	130	4.4	20	
1,1-Dichloroethene		9.12	ug/L	2.0	91	70	130	4.3	20	
cis-1,2-Dichloroethene		24.5	ug/L	2.0	49	70	130	6.9	20	S
trans-1,2-Dichloroethene		9.28	ug/L	2.0	93	70	130	0.0	20	
1,2-Dichloropropane		10.0	ug/L	2.0	100	70	130	3.1	20	
cis-1,3-Dichloropropene		10.4	ug/L	2.0	104	70	130	4.5	20	
trans-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130	1.6	20	
Ethylbenzene		10.4	ug/L	2.0	88	70	130	0.0	20	
2-Hexanone		93.6	ug/L	40	94	70	130	2.6	20	
Iodomethane		8.56	ug/L	2.0	86	70	130	2.8	20	
Methyl ethyl ketone		84.0	ug/L	40	84	70	130	2.8	20	
Methyl isobutyl ketone		88.0	ug/L	40	88	70	130	2.7	20	
Methylene chloride		8.72	ug/L	2.0	87	70	130	1.9	20	
Styrene		10.0	ug/L	2.0	82	70	130	6.9	20	
1,1,1,2-Tetrachloroethane		10.0	ug/L	2.0	100	70	130	2.4	20	
1,1,2,2-Tetrachloroethane		9.68	ug/L	2.0	97	70	130	1.6	20	
Tetrachloroethene		10.3	ug/L	2.0	103	70	130	5.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: MT DEQ

Project: Mister M Landfill

Report Date: 11/21/10

Work Order: H10100425

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R66787
Sample ID: H10100425-001DMSD 54 Sample Matrix Spike Duplicate										11/02/10 22:22
Run: 1SATURN_101102B										
Toluene		10.1	ug/L	2.0	101	70	130	2.4	20	
1,1,1-Trichloroethane		8.88	ug/L	2.0	89	70	130	7.0	20	
1,1,2-Trichloroethane		9.60	ug/L	2.0	96	70	130	7.2	20	
Trichloroethene		9.44	ug/L	2.0	94	70	130	6.6	20	
Trichlorofluoromethane		8.64	ug/L	2.0	86	70	130	2.7	20	
1,2,3-Trichloropropane		11.3	ug/L	2.0	113	70	130	6.6	20	
Vinyl acetate		9.04	ug/L	2.0	90	70	130	19	20	
Vinyl chloride		8.64	ug/L	2.0	81	70	130	8.0	20	
m+p-Xylenes		20.1	ug/L	2.0	98	70	130	3.9	20	
o-Xylene		9.92	ug/L	2.0	99	70	130	6.2	20	
Xylenes, Total		30.0	ug/L	2.0	99	70	130	4.7	20	
Surr: 1,2-Dichloroethane-d4				2.0	93	70	130	0.0	20	
Surr: Dibromofluoromethane				2.0	92	70	130	0.0	20	
Surr: p-Bromofluorobenzene				2.0	102	70	130	0.0	20	
Surr: Toluene-d8				2.0	111	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H10100425

MT DEQ

Login completed by: Wanda Johnson

Date Received: 10/27/2010

Reviewed by: BL2000kwiegand

Received by: TLL

Reviewed Date: 11/5/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	5.6°C		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

None

PLEASE PRINT (Provide as much information as possible.)

Company Name: MT DEQ	Project Name, PWS, Permit, Etc. Mission M Landfill	Sample Origin State: MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: PO Box 200901	Contact Name: Martin Van Oort	Phone/Fax: 444-2802	Email: mvanort@mt.gov
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order: 6806

Special Report/Formats:			ANALYSIS REQUESTED										SEE ATTACHED	Standard Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See instruction Page Comments:	Shipped by: Hand del Cooler ID(s): Y	
☐ DW ☐ POTWW/WWTP ☐ State: ☐ Other:			☐ EDD/EDT (Electronic Data) Format: ☐ LEVEL IV ☐ NELAC			Number of Containers Sample Type: A W S V B O D W Air Water Solids Vegetation Bioassay Other DW - Drinking Water Dissolved Metals Nitrate/Nitrite Sulfate, Cl ⁻ , F ⁻ , H ₂ Sulf 8260 VOCs											Receipt Temp 5.4 °C On Ice: ☒ N Custody Seal On Bottle ☒ N On Cooler ☒ N Intact ☒ N Signature Match ☒ N	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX															
1 Mr-M-MW-OW	10/25/10	1705	W	X	X	X	X									X		
2 Mr-M-MW-9R	10/26/10	825		X	X	X	X											
3 Mr-M-MW-11	10/26/10	1200		X	X	X	X											
4 Mr-M-MW-12	10/27/10	910		X	X	X	X											
5 Mr-M-MW-12-DLP	10/27/10	915		X	X	X	X											
6 Trip Blank	10/25/10	-					X											
7																		
8																		
9																		
10																		

Custody Record MUST be Signed	Relinquished by (print): Martin Van Oort	Date/Time: 10/27/10 18:16	Signature: <i>[Signature]</i>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client: Lab Disposal:			Received by Laboratory: Tracy Lusk 10/27/10 14:16		

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Table 1: Analytical Parameters.

Inorganics

pH

Specific conductance

Chloride

Sulfate

Nitrate/Nitrite (as N)

Dissolved Metals

Antimony (Sb)

Arsenic (As)

Barium (Ba)

Beryllium (Be)

Cadmium (Cd)

Chromium (Cr)

Cobalt (Co)

Copper (Cu)

Iron (Fe)

Lead (Pb)

Nickel (Ni)

Selenium (Se)

Silver (Ag)

Thallium (Th)

Vanadium (V)

Zinc (Zn)

Volatile Organic Compounds (VOCs by EPA method 8260)

Acetone ✓

Acrylonitrile ✓

Benzene ✓

Bromochloromethane ✓

Bromodichloromethane ✓

Bromoform

Bromomethane (Methyl bromide)

Carbon disulfide

Carbon tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane

Chloroform

Chloromethane (Methyl chloride)

10/27/2010

1,2-Dibromo-3-chloropropane (DCBP)
1,2-Dibromoethane (EDB)
Dibromomethane (Methylene bromide)
1,2-Dichlorobenzene
1,4-Dichlorobenzene
trans-1,4-Dichloro-2-butene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
Dichlorodifluoromethane
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Iodomethane (Methyl iodide)
Methylene chloride
Methyl ethyl ketone (MEK)
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

STORY ANALYTICAL REPORT

Table 1: Analytical Parameters

Inorganic

pH

Specific conductance

Chloride

Sulfate

Nitrate/Nitrite (as N)

Dissolved Metals

Antimony (Sb)

Arsenic (As)

Barium (Ba)

Beryllium (Be)

Cadmium (Cd)

Chromium (Cr)

Cobalt (Co)

Copper (Cu)

Iron (Fe)

Lead (Pb)

Nickel (Ni)

Selenium (Se)

Silver (Ag)

Thallium (Tl)

Vanadium (V)

Zinc (Zn)

Volatile Organic Compounds (VOCs) by EPA method 8260

Acetone

Acrylonitrile

Benzene

Bromochloromethane

Bromodichloromethane

Bromomethane

Bromotrichloromethane

Carbon disulfide

Chloroform

Chlorobenzene

Dichloromethane

Dibromomethane

Dibromomethane

Dibromomethane

1,2-Dibromo-3-chloropropane (DBCP)

1,2-Dibromomethane (EDB)

Dibromomethane (Methylene bromide)

1,2-Dichlorobenzene

1,4-Dichlorobenzene

trans-1,4-Dichloro-2-butene

1,1-Dichloroethane

1,2-Dichloroethane

1,1-Dichloroethene

cis-1,2-Dichloroethane

trans-1,2-Dichloroethane

Dichlorodifluoromethane

1,2-Dichloropropane

cis-1,3-Dichloropropane

trans-1,3-Dichloropropane

Ethylbenzene

2-Hexanone (Methyl butyl ketone)

Iodobenzene (Methyl iodide)

Methylene chloride

Methyl ethyl ketone (MEK)

4-Methyl-2-pentanone (Methyl isobutyl ketone)

Styrene

1,1,1,2-Tetrachloroethane

1,1,2,2-Tetrachloroethane

Tetrachloroethane

Toluene

1,1,1-Trichloroethane

1,1,2-Trichloroethane

Trichloroethane

Trichloroethene

1,2,3-Trichloropropane

Vinyl acetate

Vinyl chloride

Xylenes

APPENDIX E: LABORATORY ANALYTICAL REPORT

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-001
Client Sample ID: MrM-MW-OW

Report Date: 11/21/10
Collection Date: 10/25/10 17:05
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.		0.1		A4500-H B	10/29/10 17:46 / zeg
Conductivity	646	umhos/cm		1		A2510 B	11/01/10 13:30 / zeg
INORGANICS							
Chloride	17	mg/L		1		E300.0	11/02/10 00:56 / zeg
Sulfate	5	mg/L		1		E300.0	11/02/10 00:56 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/28/10 14:16 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	11/08/10 23:42 / dck
Arsenic	ND	mg/L		0.005		E200.8	11/08/10 23:42 / dck
Barium	ND	mg/L		0.1		E200.8	11/08/10 23:42 / dck
Beryllium	ND	mg/L		0.001		E200.8	11/08/10 23:42 / dck
Cadmium	ND	mg/L		0.001		E200.8	11/08/10 23:42 / dck
Chromium	ND	mg/L		0.01		E200.8	11/08/10 23:42 / dck
Cobalt	ND	mg/L		0.01		E200.8	11/08/10 23:42 / dck
Copper	ND	mg/L		0.01		E200.8	11/08/10 23:42 / dck
Iron	0.81	mg/L		0.03		E200.8	11/08/10 23:42 / dck
Lead	ND	mg/L		0.01		E200.8	11/08/10 23:42 / dck
Nickel	ND	mg/L		0.01		E200.8	11/08/10 23:42 / dck
Selenium	ND	mg/L		0.005		E200.8	11/08/10 23:42 / dck
Silver	ND	mg/L		0.005		E200.8	11/11/10 12:32 / dck
Thallium	ND	mg/L		0.005		E200.8	11/08/10 23:42 / dck
Vanadium	ND	mg/L		0.1		E200.8	11/08/10 23:42 / dck
Zinc	0.46	mg/L		0.01		E200.8	11/08/10 23:42 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 18:23 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 18:23 / abb
Benzene	0.74	ug/L	J	1.0		SW8260B	11/02/10 18:23 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-001
Client Sample ID MrM-MW-OV

Report Date: 11/21/10
Collection Date: 10/25/10 17:05
DateReceived: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
cis-1,2-Dichloroethene	20	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Ethylbenzene	1.6	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 18:23 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 18:23 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 18:23 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Styrene	1.8	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Vinyl chloride	0.57	ug/L	J	1.0		SW8260B	11/02/10 18:23 / abb
m+p-Xylenes	0.41	ug/L	J	1.0		SW8260B	11/02/10 18:23 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 18:23 / abb
Xylenes, Total	0.41	ug/L	J	1.0		SW8260B	11/02/10 18:23 / abb
Surr: 1,2-Dichloroethane-d4	94.0	%REC		70-130		SW8260B	11/02/10 18:23 / abb
Surr: Dibromofluoromethane	94.0	%REC		70-130		SW8260B	11/02/10 18:23 / abb
Surr: p-Bromofluorobenzene	109	%REC		70-130		SW8260B	11/02/10 18:23 / abb
Surr: Toluene-d8	108	%REC		70-130		SW8260B	11/02/10 18:23 / abb

**Report
Definitions:**

RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-002
Client Sample ID MrM-MW-9R

Report Date: 11/21/10
Collection Date: 10/26/10 08:25
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.1	s.u.		0.1		A4500-H B	10/29/10 17:50 / zeg
Conductivity	896	umhos/cm		1		A2510 B	11/01/10 13:31 / zeg
INORGANICS							
Chloride	17	mg/L		1		E300.0	11/02/10 01:12 / zeg
Sulfate	68	mg/L		1		E300.0	11/02/10 01:12 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	2.95	mg/L		0.05		E353.2	10/28/10 14:18 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	11/09/10 00:05 / dck
Arsenic	ND	mg/L		0.005		E200.8	11/09/10 00:05 / dck
Barium	ND	mg/L		0.1		E200.8	11/10/10 22:03 / dck
Beryllium	ND	mg/L		0.001		E200.8	11/09/10 00:05 / dck
Cadmium	ND	mg/L		0.001		E200.8	11/10/10 22:03 / dck
Chromium	ND	mg/L		0.01		E200.8	11/09/10 00:05 / dck
Cobalt	ND	mg/L		0.01		E200.8	11/09/10 00:05 / dck
Copper	ND	mg/L		0.01		E200.8	11/09/10 00:05 / dck
Iron	ND	mg/L		0.03		E200.8	11/09/10 00:05 / dck
Lead	ND	mg/L		0.01		E200.8	11/10/10 22:03 / dck
Nickel	ND	mg/L		0.01		E200.8	11/09/10 00:05 / dck
Selenium	ND	mg/L		0.005		E200.8	11/09/10 00:05 / dck
Silver	ND	mg/L		0.005		E200.8	11/11/10 12:35 / dck
Thallium	ND	mg/L		0.005		E200.8	11/10/10 22:03 / dck
Vanadium	ND	mg/L		0.1		E200.8	11/09/10 00:05 / dck
Zinc	ND	mg/L		0.01		E200.8	11/09/10 00:05 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 18:53 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 18:53 / abb
Benzene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-002
Client Sample ID: MrM-MW-9R

Report Date: 11/21/10
Collection Date: 10/26/10 08:25
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
cis-1,2-Dichloroethene	3.8	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 18:53 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 18:53 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 18:53 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Styrene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Tetrachloroethene	0.33	ug/L	J	1.0		SW8260B	11/02/10 18:53 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	11/02/10 18:53 / abb
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	11/02/10 18:53 / abb
Surr: Dibromofluoromethane	96.0	%REC		70-130		SW8260B	11/02/10 18:53 / abb
Surr: p-Bromofluorobenzene	107	%REC		70-130		SW8260B	11/02/10 18:53 / abb
Surr: Toluene-d8	104	%REC		70-130		SW8260B	11/02/10 18:53 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-003
Client Sample ID MrM-MW-11

Report Date: 11/21/10
Collection Date: 10/26/10 12:00
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.		0.1		A4500-H B	10/29/10 17:57 / zeg
Conductivity	655	umhos/cm		1		A2510 B	11/01/10 13:32 / zeg
INORGANICS							
Chloride	3	mg/L		1		E300.0	11/02/10 02:01 / zeg
Sulfate	42	mg/L		1		E300.0	11/02/10 02:01 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/28/10 14:20 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	11/09/10 00:10 / dck
Arsenic	ND	mg/L		0.005		E200.8	11/09/10 00:10 / dck
Barium	ND	mg/L		0.1		E200.8	11/10/10 22:06 / dck
Beryllium	ND	mg/L		0.001		E200.8	11/09/10 00:10 / dck
Cadmium	ND	mg/L		0.001		E200.8	11/10/10 22:06 / dck
Chromium	ND	mg/L		0.01		E200.8	11/09/10 00:10 / dck
Cobalt	ND	mg/L		0.01		E200.8	11/09/10 00:10 / dck
Copper	ND	mg/L		0.01		E200.8	11/09/10 00:10 / dck
Iron	0.11	mg/L		0.03		E200.8	11/09/10 00:10 / dck
Lead	ND	mg/L		0.01		E200.8	11/10/10 22:06 / dck
Nickel	ND	mg/L		0.01		E200.8	11/09/10 00:10 / dck
Selenium	ND	mg/L		0.005		E200.8	11/09/10 00:10 / dck
Silver	ND	mg/L		0.005		E200.8	11/11/10 12:38 / dck
Thallium	ND	mg/L		0.005		E200.8	11/10/10 22:06 / dck
Vanadium	ND	mg/L		0.1		E200.8	11/09/10 00:10 / dck
Zinc	ND	mg/L		0.01		E200.8	11/09/10 00:10 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 19:23 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 19:23 / abb
Benzene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-003
Client Sample ID MrM-MW-11

Report Date: 11/21/10
Collection Date: 10/26/10 12:00
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 19:23 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 19:23 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 19:23 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Styrene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	11/02/10 19:23 / abb
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	11/02/10 19:23 / abb
Surr: Dibromofluoromethane	93.0	%REC		70-130		SW8260B	11/02/10 19:23 / abb
Surr: p-Bromofluorobenzene	102	%REC		70-130		SW8260B	11/02/10 19:23 / abb
Surr: Toluene-d8	108	%REC		70-130		SW8260B	11/02/10 19:23 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-004
Client Sample ID: MrM-MW-12

Report Date: 11/21/10
Collection Date: 10/27/10 09:10
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.1	s.u.		0.1		A4500-H B	10/29/10 18:01 / zeg
Conductivity	683	umhos/cm		1		A2510 B	11/01/10 13:33 / zeg
INORGANICS							
Chloride	5	mg/L		1		E300.0	11/02/10 02:18 / zeg
Sulfate	35	mg/L		1		E300.0	11/02/10 02:18 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/28/10 14:22 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	11/09/10 00:15 / dck
Arsenic	ND	mg/L		0.005		E200.8	11/09/10 00:15 / dck
Barium	ND	mg/L		0.1		E200.8	11/10/10 22:09 / dck
Beryllium	ND	mg/L		0.001		E200.8	11/09/10 00:15 / dck
Cadmium	ND	mg/L		0.001		E200.8	11/10/10 22:09 / dck
Chromium	ND	mg/L		0.01		E200.8	11/09/10 00:15 / dck
Cobalt	ND	mg/L		0.01		E200.8	11/09/10 00:15 / dck
Copper	ND	mg/L		0.01		E200.8	11/09/10 00:15 / dck
Iron	0.31	mg/L		0.03		E200.8	11/09/10 00:15 / dck
Lead	ND	mg/L		0.01		E200.8	11/10/10 22:09 / dck
Nickel	ND	mg/L		0.01		E200.8	11/09/10 00:15 / dck
Selenium	ND	mg/L		0.005		E200.8	11/09/10 00:15 / dck
Silver	ND	mg/L		0.005		E200.8	11/11/10 12:53 / dck
Thallium	ND	mg/L		0.005		E200.8	11/10/10 22:09 / dck
Vanadium	ND	mg/L		0.1		E200.8	11/09/10 00:15 / dck
Zinc	ND	mg/L		0.01		E200.8	11/09/10 00:15 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 19:53 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 19:53 / abb
Benzene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-004
Client Sample ID MrM-MW-12

Report Date: 11/21/10
Collection Date: 10/27/10 09:10
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
cis-1,2-Dichloroethene	0.57	ug/L	J	1.0		SW8260B	11/02/10 19:53 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 19:53 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 19:53 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 19:53 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Styrene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	11/02/10 19:53 / abb
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	11/02/10 19:53 / abb
Surr: Dibromofluoromethane	99.0	%REC		70-130		SW8260B	11/02/10 19:53 / abb
Surr: p-Bromofluorobenzene	104	%REC		70-130		SW8260B	11/02/10 19:53 / abb
Surr: Toluene-d8	103	%REC		70-130		SW8260B	11/02/10 19:53 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-005
Client Sample ID MrM-MW-12-DUP

Report Date: 11/21/10
Collection Date: 10/27/10 09:15
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.1	s.u.		0.1		A4500-H B	10/29/10 18:04 / zeg
Conductivity	698	umhos/cm		1		A2510 B	11/01/10 13:35 / zeg
INORGANICS							
Chloride	4	mg/L		1		E300.0	11/03/10 10:48 / zeg
Sulfate	33	mg/L		1		E300.0	11/03/10 10:48 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/28/10 14:24 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	11/09/10 00:33 / dck
Arsenic	ND	mg/L		0.005		E200.8	11/09/10 00:33 / dck
Barium	ND	mg/L		0.1		E200.8	11/10/10 22:12 / dck
Beryllium	ND	mg/L		0.001		E200.8	11/09/10 00:33 / dck
Cadmium	ND	mg/L		0.001		E200.8	11/10/10 22:12 / dck
Chromium	ND	mg/L		0.01		E200.8	11/09/10 00:33 / dck
Cobalt	ND	mg/L		0.01		E200.8	11/09/10 00:33 / dck
Copper	ND	mg/L		0.01		E200.8	11/09/10 00:33 / dck
Iron	0.30	mg/L		0.03		E200.8	11/09/10 00:33 / dck
Lead	ND	mg/L		0.01		E200.8	11/10/10 22:12 / dck
Nickel	ND	mg/L		0.01		E200.8	11/09/10 00:33 / dck
Selenium	ND	mg/L		0.005		E200.8	11/09/10 00:33 / dck
Silver	ND	mg/L		0.005		E200.8	11/11/10 13:15 / dck
Thallium	ND	mg/L		0.005		E200.8	11/10/10 22:12 / dck
Vanadium	ND	mg/L		0.1		E200.8	11/09/10 00:33 / dck
Zinc	ND	mg/L		0.01		E200.8	11/09/10 00:33 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	11/02/10 20:23 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	11/02/10 20:23 / abb
Benzene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Bromoform	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Chloroform	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: Mister M Landfill
Lab ID: H10100425-005
Client Sample ID MrM-MW-12-DUP

Report Date: 11/21/10
Collection Date: 10/27/10 09:15
Date Received: 10/27/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
cis-1,2-Dichloroethene	0.62	ug/L	J	1.0		SW8260B	11/02/10 20:23 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
2-Hexanone	ND	ug/L		20		SW8260B	11/02/10 20:23 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/02/10 20:23 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/02/10 20:23 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Styrene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Toluene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	11/02/10 20:23 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	11/02/10 20:23 / abb
Surr: Dibromofluoromethane	98.0	%REC		70-130		SW8260B	11/02/10 20:23 / abb
Surr: p-Bromofluorobenzene	105	%REC		70-130		SW8260B	11/02/10 20:23 / abb
Surr: Toluene-d8	102	%REC		70-130		SW8260B	11/02/10 20:23 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Well	Date	General Chemistry (mg/l)							Metals (mg/l)																
		pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-1	8/10/93	7.5	544	16	75	0.77	27			<0.005	0.1		<0.001	<0.01			<0.03	<0.01	<0.001		<0.005	<0.005			
	12/8/95	7.2	789	19	34	0.53	1	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	0.08	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	3/30/96	7.6	684	13	28			<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.3	716	9	30	1.62	8	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/10/06	7.6	775	13	25	2.42	6	<0.005	<0.01	<0.005	0.29	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	6/28/07	7.5	781	19	24	1.49	10	<0.005	<0.01	<0.005	0.24	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	1/22/09	7.5	805	19	23	1.90	5		<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/10/93	6.9	823	47	52	<0.05	57			<0.005	0.2		<0.001	<0.01			<0.03	<0.01	<0.001		<0.005	<0.005			
MW-2	6/28/07	7.3	946	54	60	0.21	13	<0.005	<0.01	<0.005	0.14	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	8/10/93	7.8	721	28	51	0.43	40			<0.005	0.2		0.003	<0.01			<0.01	0.03	<0.001		<0.005	<0.005			
MW-4	11/21/03	7.8	670	16	59	2.81	22	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-5	11/21/03	7.7	718	5	68	2.72	38	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.054	<0.005	<0.1	<0.1	<0.01
	8/19/04	7.9	926	10	100	2.81	2	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.055	<0.005	<0.1	<0.1	0.02
	11/30/05	7.4	841	11	46	1.96	100	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.058	<0.005	<0.1	<0.1	<0.01
	11/9/06	7.6	969	5	43	2.66	4	<0.005	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.184	<0.0002	<0.01	<0.05	<0.01
	6/27/07	7.7	937	7	50	1.89	22	<0.005	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.124	<0.0002	<0.01	<0.05	<0.01
	12/19/07	7.6	880	9	49	1.70	4																		
	6/3/09	7.6	1020	14	55	2.12	7	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.111	<0.005	<0.1	<0.1	<0.01
	MW-6	6/27/07	7.6	1040	5	56	0.18	6	<0.005	<0.01	<0.005	0.15	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05
MW-6M	8/20/04	7.9	388	4	20	1.68	2	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.06
MW-7	12/8/95																								
	3/30/96	6.8	942	34	40	<0.05	<1	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	0.28	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.10	0.02
MW-7R	6/28/07	7.3	1350	80	157	2.10	14	<0.005	<0.01	<0.005	0.05	<0.001	<0.0005	<0.002	<0.005	0.002	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-8	11/21/03	7.3	743	17	38	1.03	120	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.4	746	10	50	2.64	8	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-9	12/8/95																								
	3/30/96	7.4	734	13	26	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-9R	10/24/97	7.7	814	14	99	4.74	6	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	8/20/04	7.6	760	10	90	5.58	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/2/09	7.5	952	24	75	3.47	7	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	922	14	82	4.04	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/26/10	8.1	896	17	68	2.95			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.0005	<0.1	<0.01
	11/14/94	7.5	684	47	30	<0.05	6	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
MW-10	12/29/94																								
	5/25/95	8.0	668	45	25	<0.05	11	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.06
	12/8/95	7.4	646	15	30	<0.05	10	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	3/30/96	7.4	647	6	25	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.2	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
	10/24/97	7.6	1100	23	111	2.01	10	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.04	<0.01	<0.001	<0.01	0.034	<0.005	<0.1	<0.1	<0.01
MW-10R	6/29/98	7.5	1130	18	99	1.7	7	<0.005	0.04J	0.004J	<0.1	0.0009J	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.001	<0.01	0.091	<0.005	<0.1	<0.1	0.02
	11/17/98	7.5	947	19	113	2.18	12	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.093	<0.005	<0.1	<0.1	<0.01J
	5/4/99	7.7	1070	19	104	1.85	<1	<0.005	<0.05	0.008	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.35	<0.01	<0.001	<0.01	0.101	<0.005	<0.1	<0.1	0.02
	12/3/99	7.3	1070	14	112	2.01	8	<0.005	<0.05	<0.005J	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.07	<0.01	<0.001	<0.01	0.114	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.7	970	10	100	2.39	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.050	<0.005	<0.1	<0.1	0.07

"J" = Estimated value.

Table F-1: Historical Groundwater Quality

Well	Date	General Chemistry (mg/l)							Metals (mg/l)																	
		pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
MW-10R (cont.)	1/22/09	7.8	1080	17	89	1.63	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.060	<0.005	<0.1	<0.1	<0.01
	6/2/09	7.7	1020	23	82	1.42	3	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.011	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	1080	17	88	1.82	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.081	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.2	1080	17	88	1.95	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.071	<0.005	<0.1	<0.1	<0.01
MW-11	10/26/10	8.2	655	3	42	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.11	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01	
MW-11M	8/20/04	7.3	1110	20	70	2.36	<1	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.08	
MW-12	10/27/10	8.1	683	5	35	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.31	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01	
	10/27/10	8.1	698	4	33	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.30	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01	
MW-13	10/24/97	7.9	441	<1	80	0.15	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.01	
MW-OW	11/14/94	7.3	771	29	29	<0.05	5	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.57	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.15
	12/29/94																									
	5/25/95	7.8	721	4	33	<0.05	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.58	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	12/8/95	7.3	718	4	37	<0.05	6	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.10	0.09
	3/30/96	7.4	732	5	29	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	1.01	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.13
	10/24/97	7.6	691	6	37	<0.05	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.57	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.05
	6/29/98	7.3	714	9	34	<0.05	4	<0.005	<0.05	<0.005	0.07J	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.12	
	11/17/98	7.5	757	119	15	<0.05	20	<0.005	<0.05	<0.005J	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	2.00	<0.01	<0.001	0.03	<0.005	<0.005	<0.1	<0.1	0.30
	5/4/99	7.7	687	7	34	<0.05	<1	<0.005	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.68	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.06
	12/2/99	7.4	675	4	36	<0.05	4	<0.005	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.73	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.5	794	10	90	<0.05	30	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.68
	8/20/04	7.5	802	10	100	<0.05	28	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.64
	11/10/06	7.7	718	22	27	<0.02	4	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	0.31	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	0.36	
	6/28/07	7.7	692	10	36	<0.01	2	<0.005	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.41	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	0.16	
	12/18/07	7.5	669	47	2	<0.01	9	<0.005	<0.01	<0.005	0.09	<0.001	<0.0005	<0.002	<0.005	<0.001	3.79	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	3.17	
	1/21/09	7.8	678	49	<1	<0.05	11	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	2.87	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.29
	6/1/09	7.6	654	51	<1	<0.05	9	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.48	
	6/1/09	7.7	649	51	<1	<0.05	8	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.47	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/5/09																									
	10/26/09	8.1	683	14	18	<0.05	8	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	2.38	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	10/25/10	8.2	646	17	5	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.81	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	0.46
MW-HW	6/10/80	7.6	848	2.5	107								<0.002	0.007		0.013	0.75	<0.04		0.01		0.006		0.007	0.04	
	11/14/94	7.1	815	3	100	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.14	<0.01	<0.001	<0.1	<0.005	<0.005	<0.1	<0.10	0.04
	5/25/95	7.8	780	8	38	0.12	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.1	<0.005	<0.005	<0.1	<0.10	0.02
	12/8/95	7.2	786	4	75	<0.05	9	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.05
	3/30/96	7.4	796	8	29	0.44	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.005	<0.005	<0.1	<0.10	0.04
	10/24/97	7.4	779	4	83	<0.05	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/29/98	7.3	723	7	55	<0.05	4	<0.005	<0.05	<0.005	0.06J	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.05
	11/17/98	7.2	668	4	87	<0.05	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.52	<0.01	<0.001	<0.01J	<0.005	<0.005	<0.1	<0.1	0.04
	5/4/99	7.6	755	4	87	0.15	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.25	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	12/2/99	7.2	763	4	105	<0.05	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	0.34	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.6	705	10	40	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	11/29/05	7.4	676	5	78	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/29/05	7.4	700	6	77	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	&									

"J" = Estimated value.

Table F-1: Historical Groundwater Quality

Well	Date	General Chemistry (mg/l)						Metals (mg/l)																	
		pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-HW (cont.)	6/28/07	7.7	756	10	36	0.17	1	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.010	<0.0002	<0.01	<0.05	<0.01
	12/18/07	7.4	756	9	36	0.01	<1	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.02
	1/21/09	7.5	837	8	34	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	6/1/09	7.5	773	10	37	0.17	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	10/26/09	8.0	795	8	36	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.1
Richards	6/28/07	7.9	645	5	47	<0.01	<1	<0.005	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.14	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01

"J" = Estimated value.

Table F-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		Acetone	Acrylonitrile	Benzene	Bromochloro- methane	Bromodichloro- methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo- methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3- chloropropane	1,2- Dibromoethane	Dibromomethane	1,2- Dichlorobenzene	1,4- Dichlorobenzene	trans-1,4- Dichloro-2-	Dichlorodifluoro- methane	1,1- Dichloroethane	1,2- Dichloroethane	1,1- Dichloroethene	cis-1,2- Dichloroethene
MW-HW (cont.)	6/28/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/18/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/21/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/1/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/26/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Richards	6/28/07			<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50

"J" = Estimated value.

Table F-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																	
		1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane
MW-10R (cont.)	1/22/09	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/2/09	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.19J	<1.0	<1.0	<1.0	<1.0
	10/27/09	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20J	<1.0	<1.0	<1.0	<1.0
MW-11	10/26/10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11M	8/20/04	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	0.29J	<1.0	<1.0	<1.0	0.99J	<1.0	<1.0	<1.0	0.23J	<1.0
	10/27/10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	10/27/10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/24/97	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-OW	11/14/94	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/29/94	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/25/95	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/8/95	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/30/96	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	0.11J	<1.0	<1.0	<1.0	<1.0	<1.0
	10/24/97	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/29/98	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/17/98	0.45J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	0.38J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/4/99	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/2/99	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	0.26J	<1.0	<1.0	3.0	<2.0	<1.0	<2.0	<2.0	0.22J	2.0	<1.0	<1.0	<1.0	0.84J	<1.0	<1.0	0.41J	<1.0
	8/20/04	0.25J	<1.0	<1.0	3.0	<2.0	<1.0	<2.0	<2.0	0.21J	2.1	<1.0	<1.0	<1.0	0.84J	<1.0	<1.0	0.43J	<1.0
	11/10/06	<1.0	<1.0	<1.0	0.20J	<10	<1.0	<2.0	<10	<1.0	0.13J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22J	<1.0
	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/18/07	0.18J	<1.0	<1.0	3.3	<2.0	<1.0	<2.0	<2.0	<1.0	4.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.67J	<1.0
	1/21/09	<1.0	<1.0	<1.0	3.9	<2.0	<1.0	<2.0	<2.0	<1.0	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.26J	<1.0
	6/1/09	<1.0	<1.0	<1.0	0.39J	<2.0	<1.0	<2.0	<2.0	<1.0	0.61J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0
	6/1/09	<1.0	<1.0	<1.0	0.30J	<2.0	<1.0	<2.0	<2.0	<1.0	0.55J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0
	6/5/09	<1.0	<1.0	<1.0	2.3			<2.0		<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.19J	<1.0
	10/26/09	<1.0	<1.0	<1.0	5.4	<2.0	<1.0	<2.0	<2.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.24J	<1.0
	10/25/10	<1.0	<1.0	<1.0	1.6	<2.0	<1.0	<2.0	<2.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-HW	6/10/80																		
	11/14/94	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/25/95	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	0.17J	<1.0	<1.0	<1.0	<1.0	<1.0
	12/8/95	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/30/96	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.14J	<1.0	<1.0	<1.0	<1.0
	10/24/97	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/29/98	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/17/98	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/4/99	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/2/99	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/10/06	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

"J" = Estimated value.

Table F-1: Historical Groundwater Quality

		VOCs (ug/l)																							
Well	Date	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-HW (cont.)	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/18/07	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	1/21/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	6/1/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	10/26/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Richards	6/28/07	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50

"J" = Estimated value.

Table F-1: Historical Groundwater Quality



Figure F-2: Specific Conductance

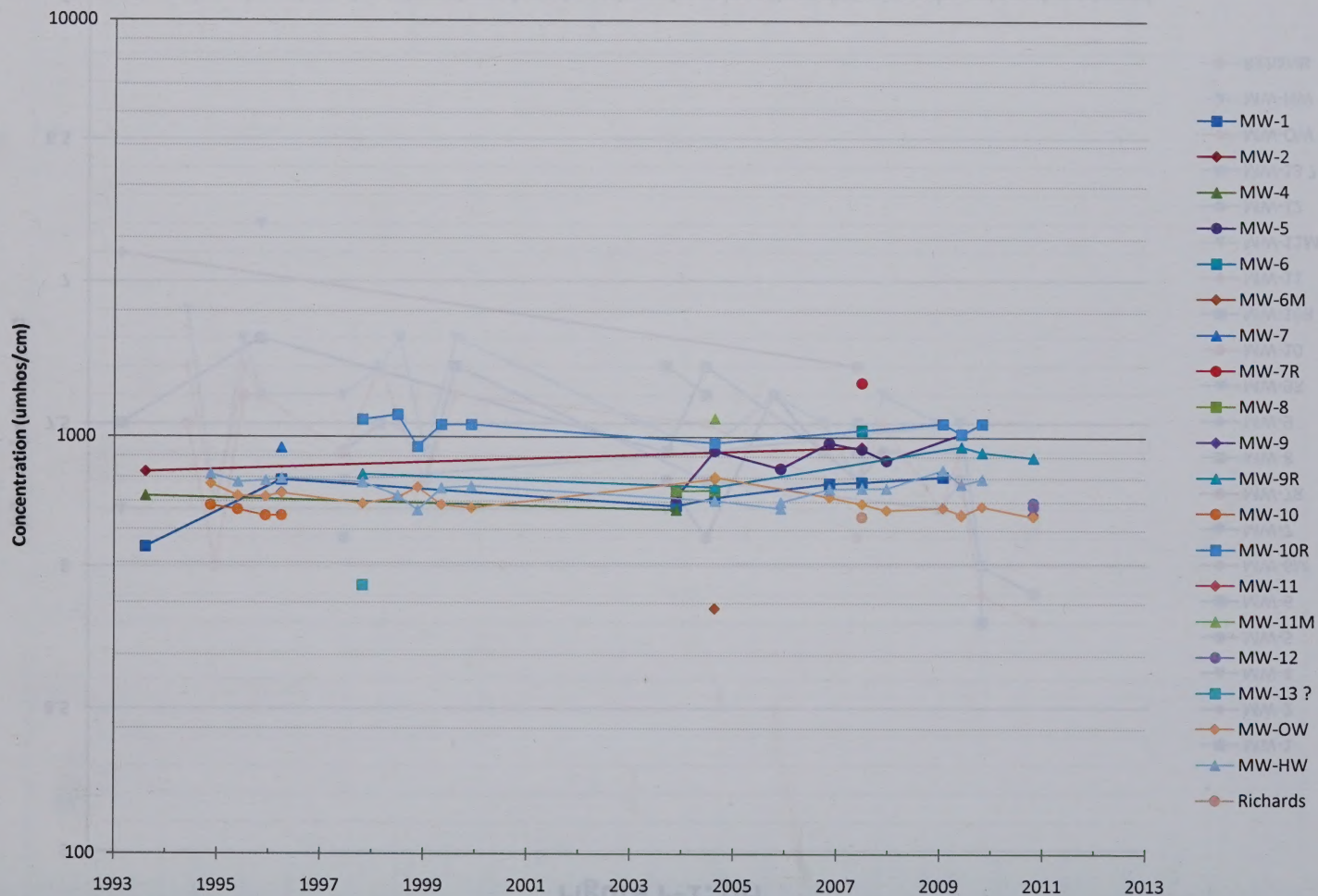


Figure F-3: Chloride

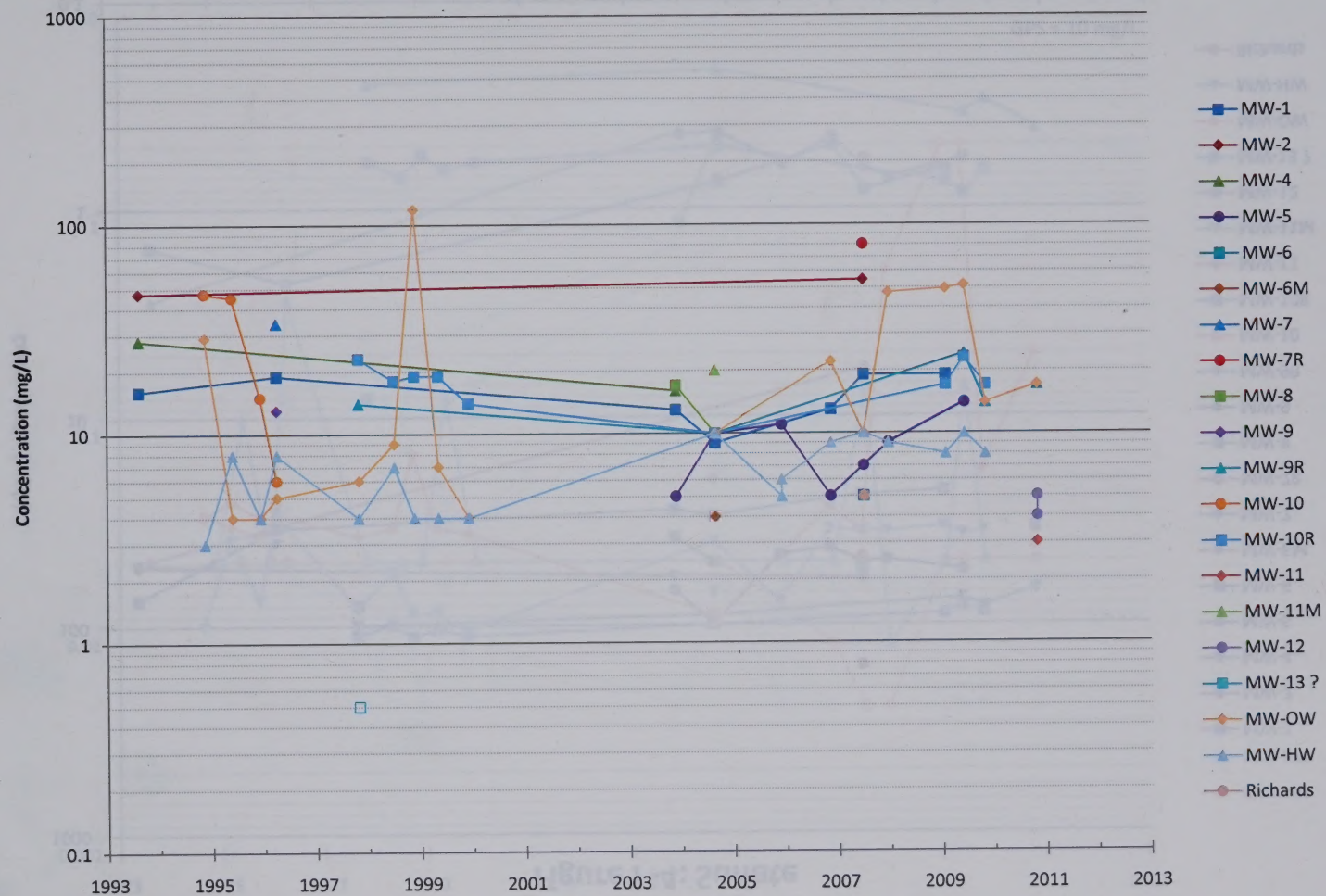


Figure E-4: Sulfate

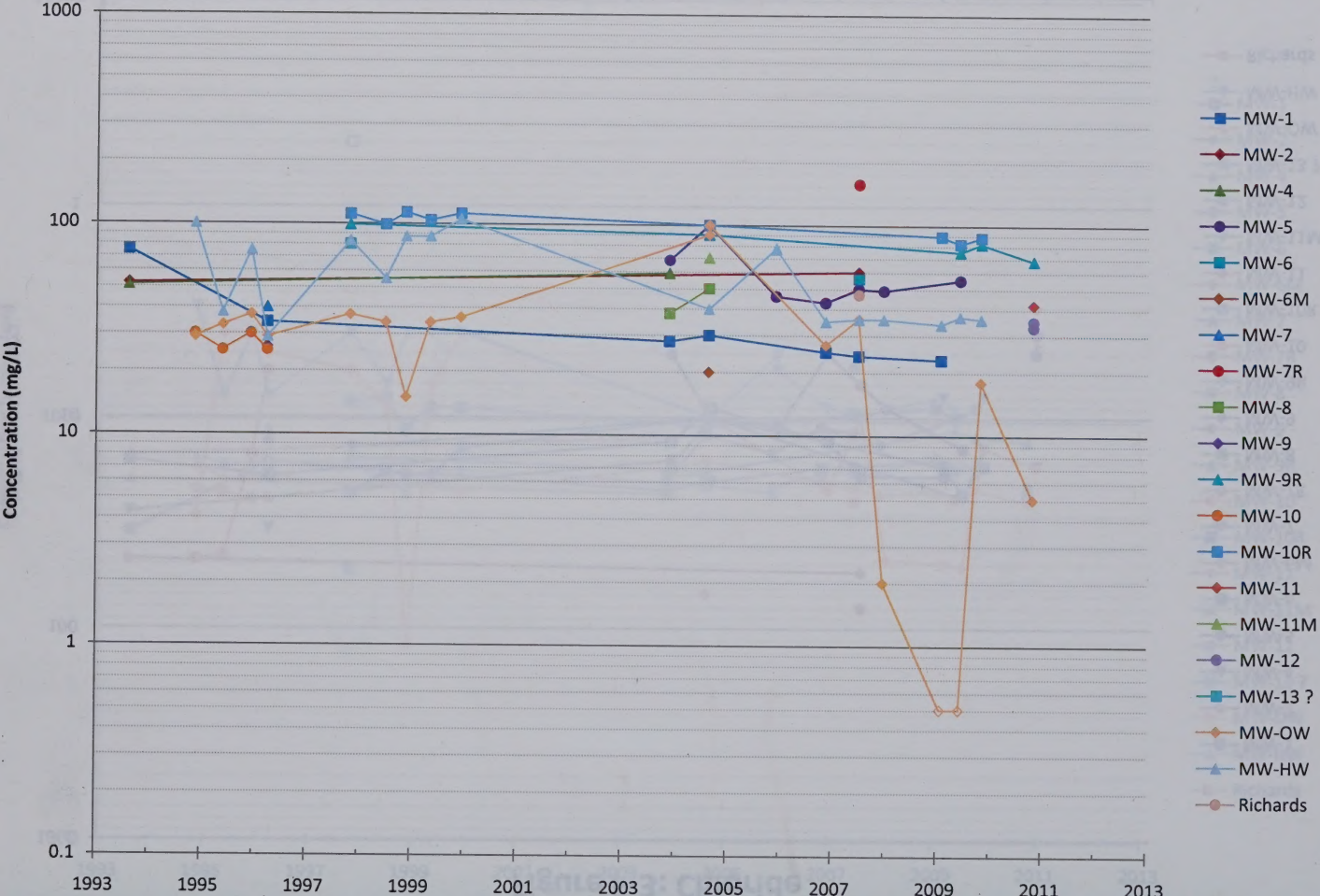


Figure F-5: Nitrate + Nitrite



Figure F-6: Iron

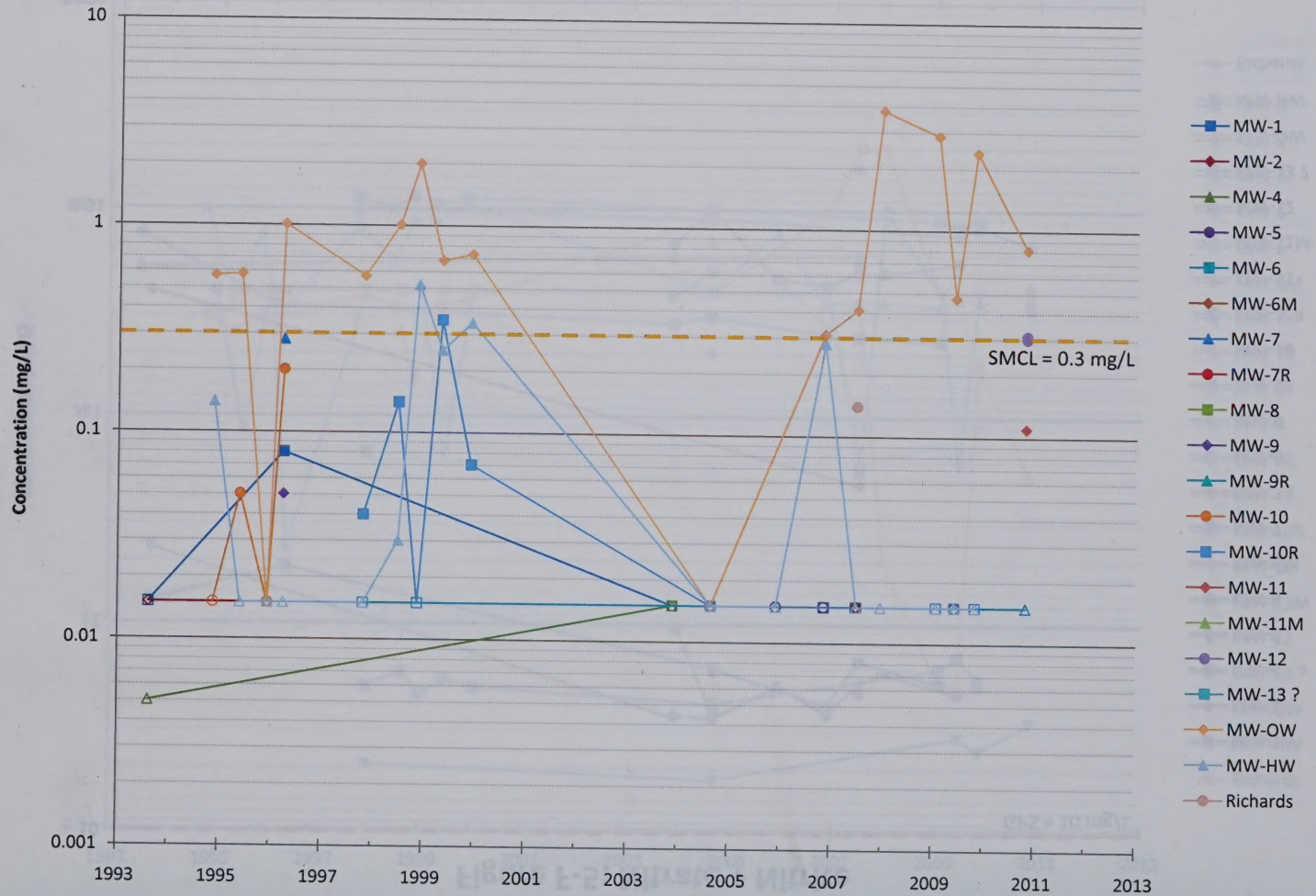


Figure F-7: Zinc



Figure E 8: Benzene

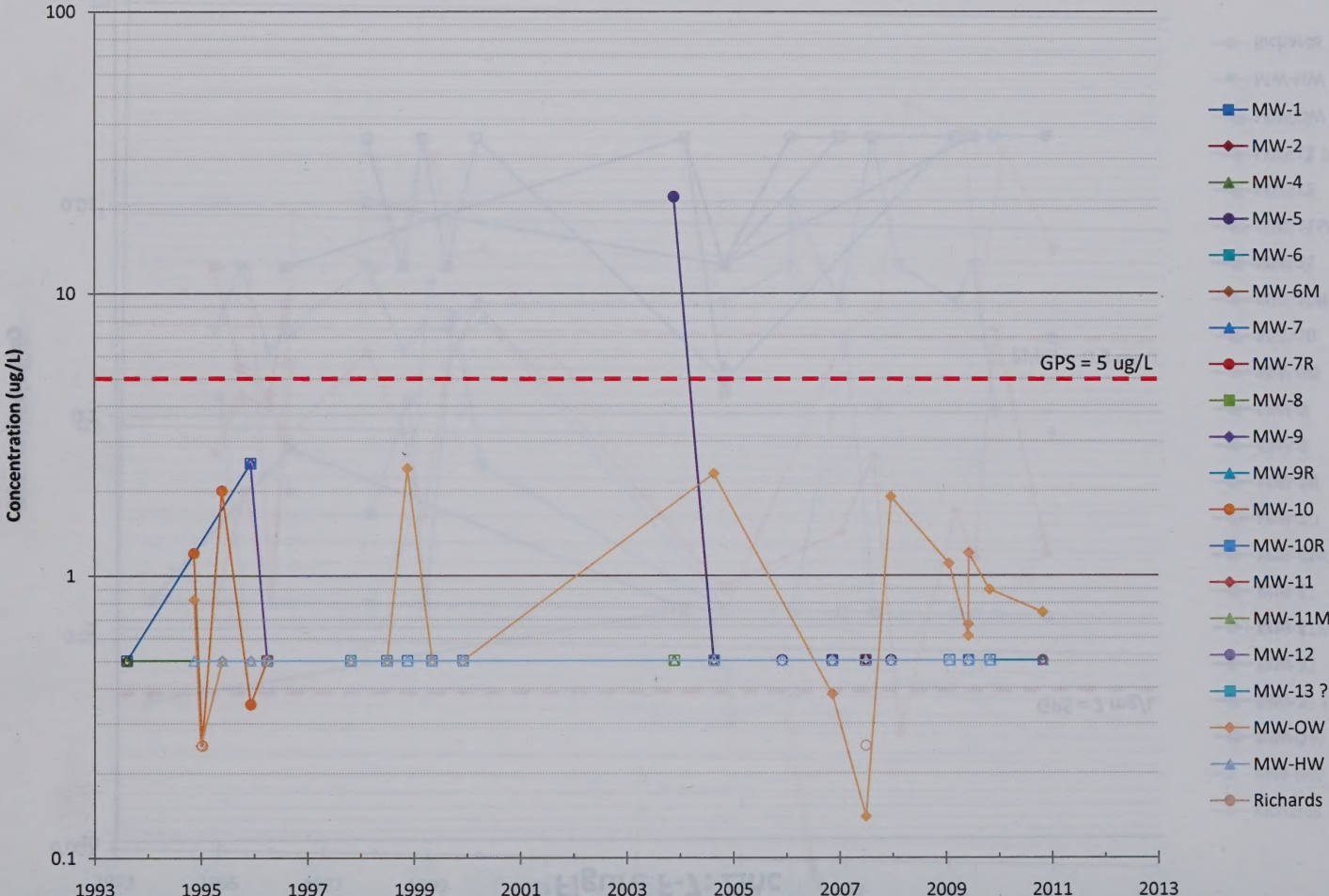


Figure F-9: cis-1,2-Dichloroethene

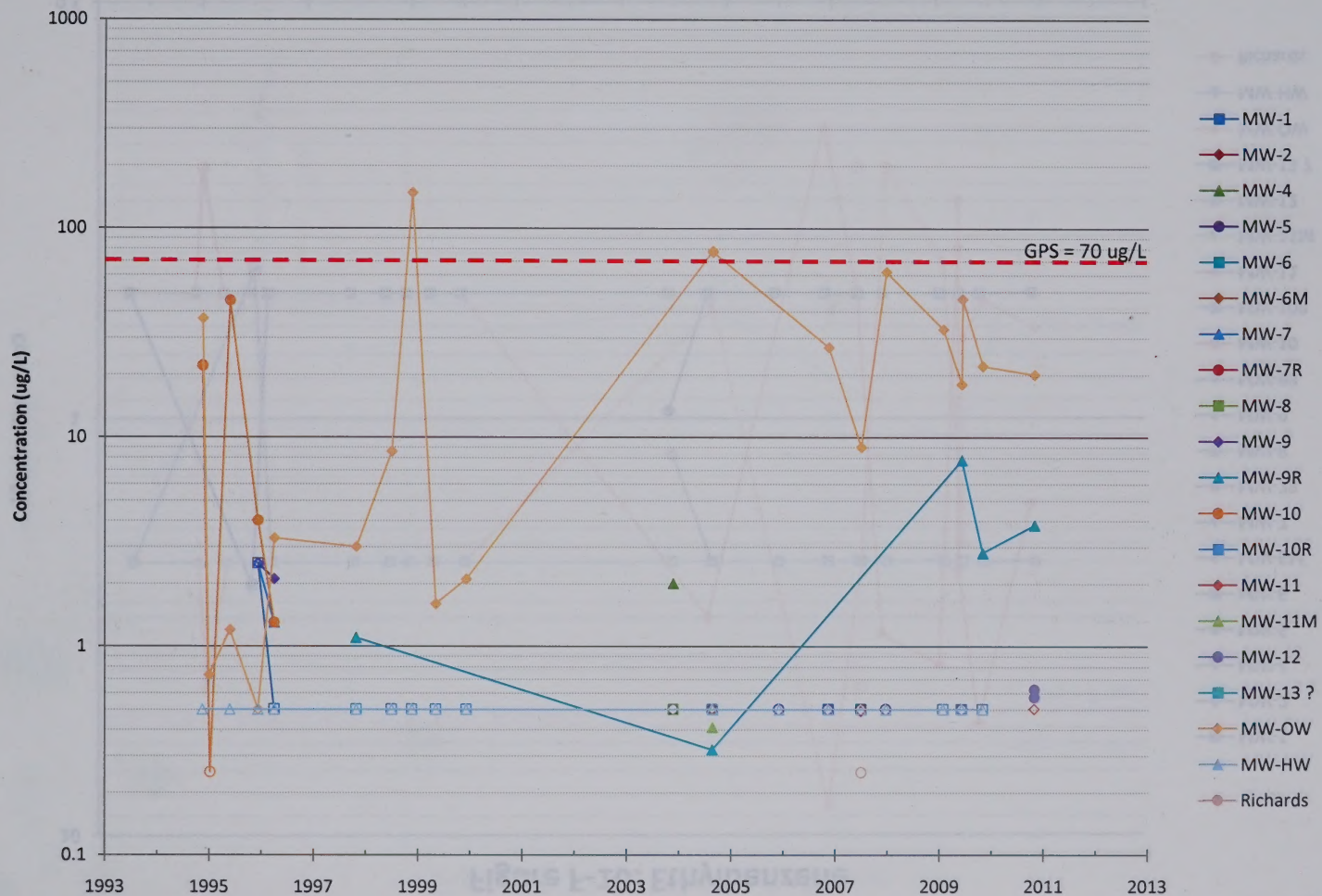


Figure E-10: Ethylbenzene

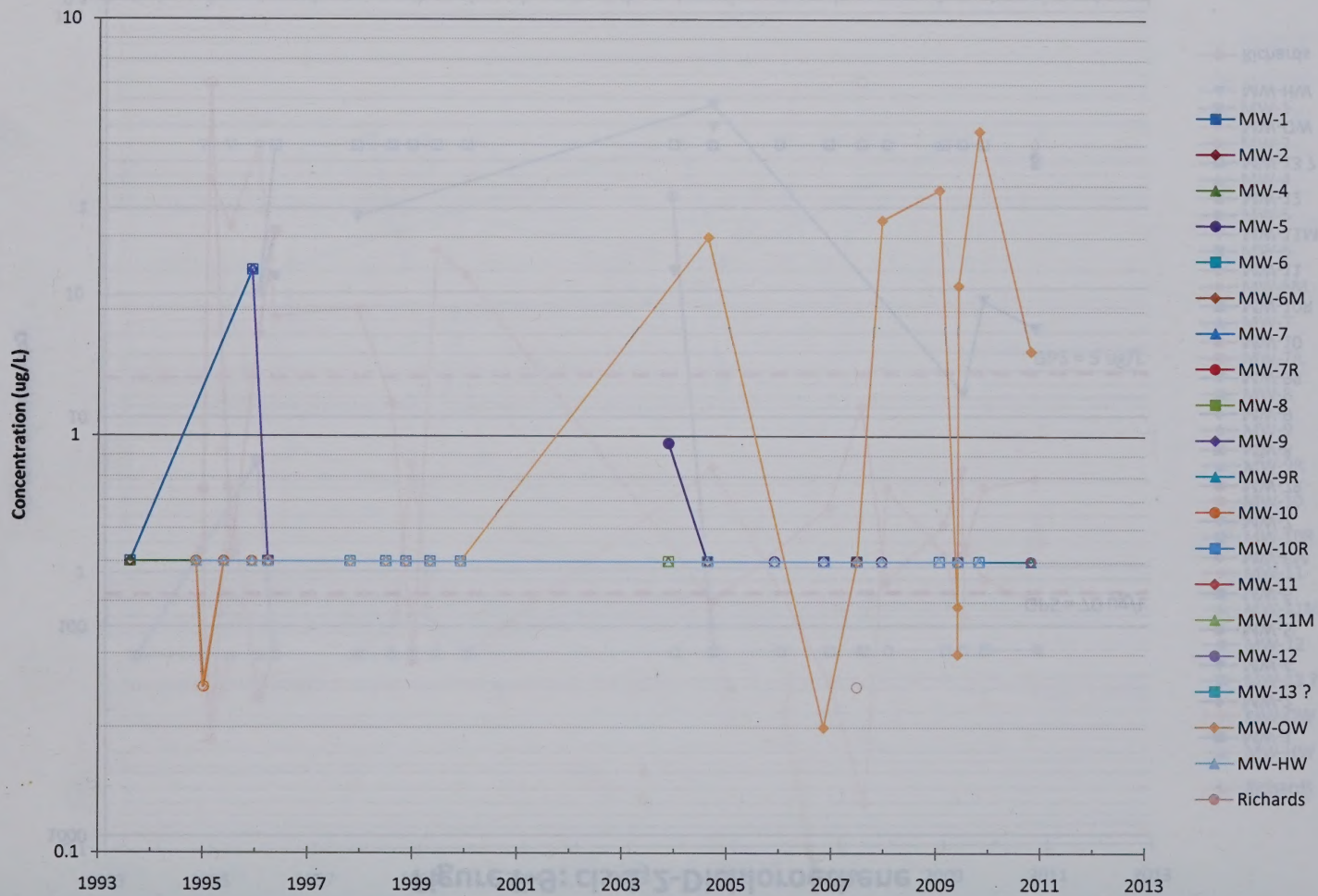


Figure F-11: Styrene

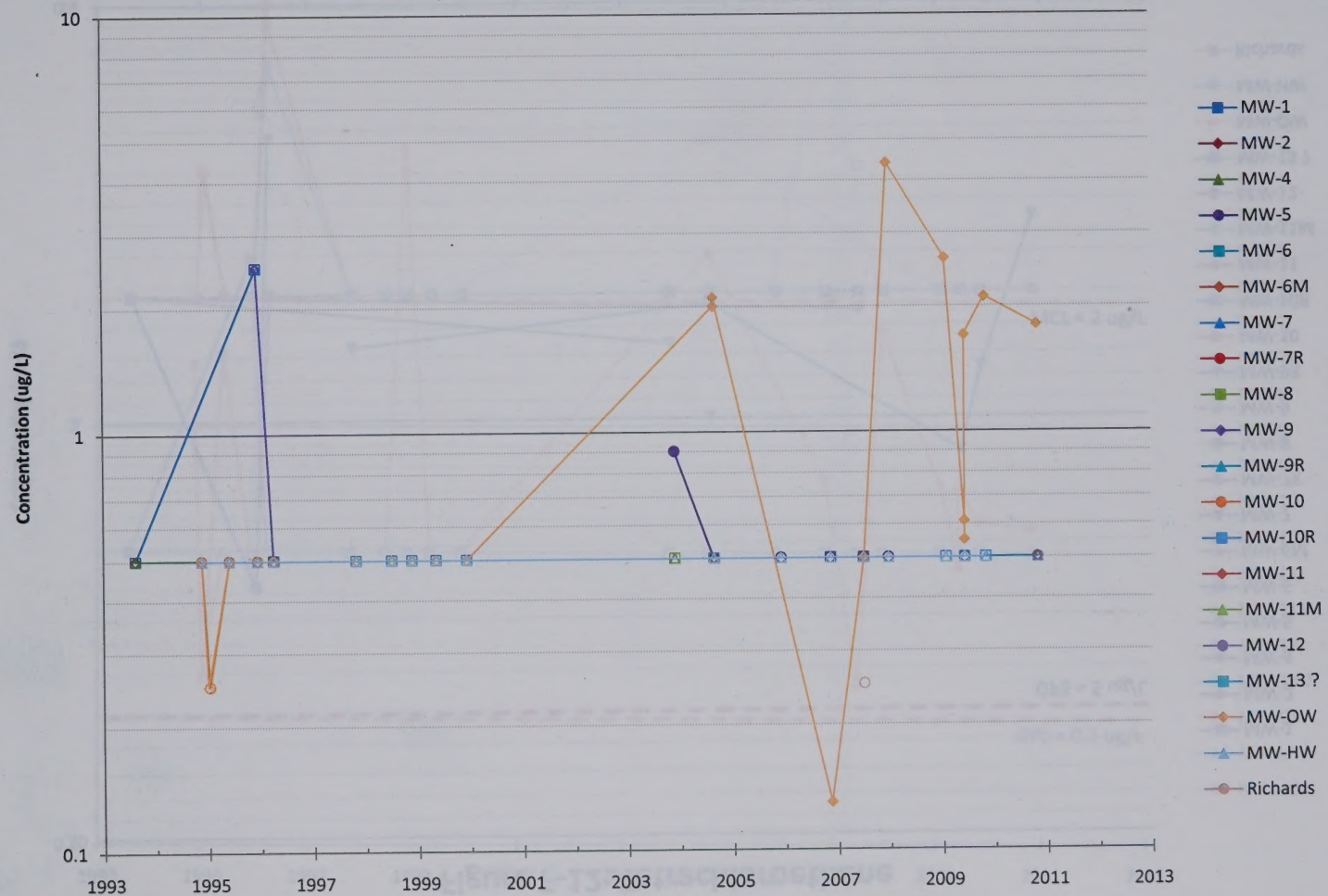


Figure F-12: Tetrachloroethene

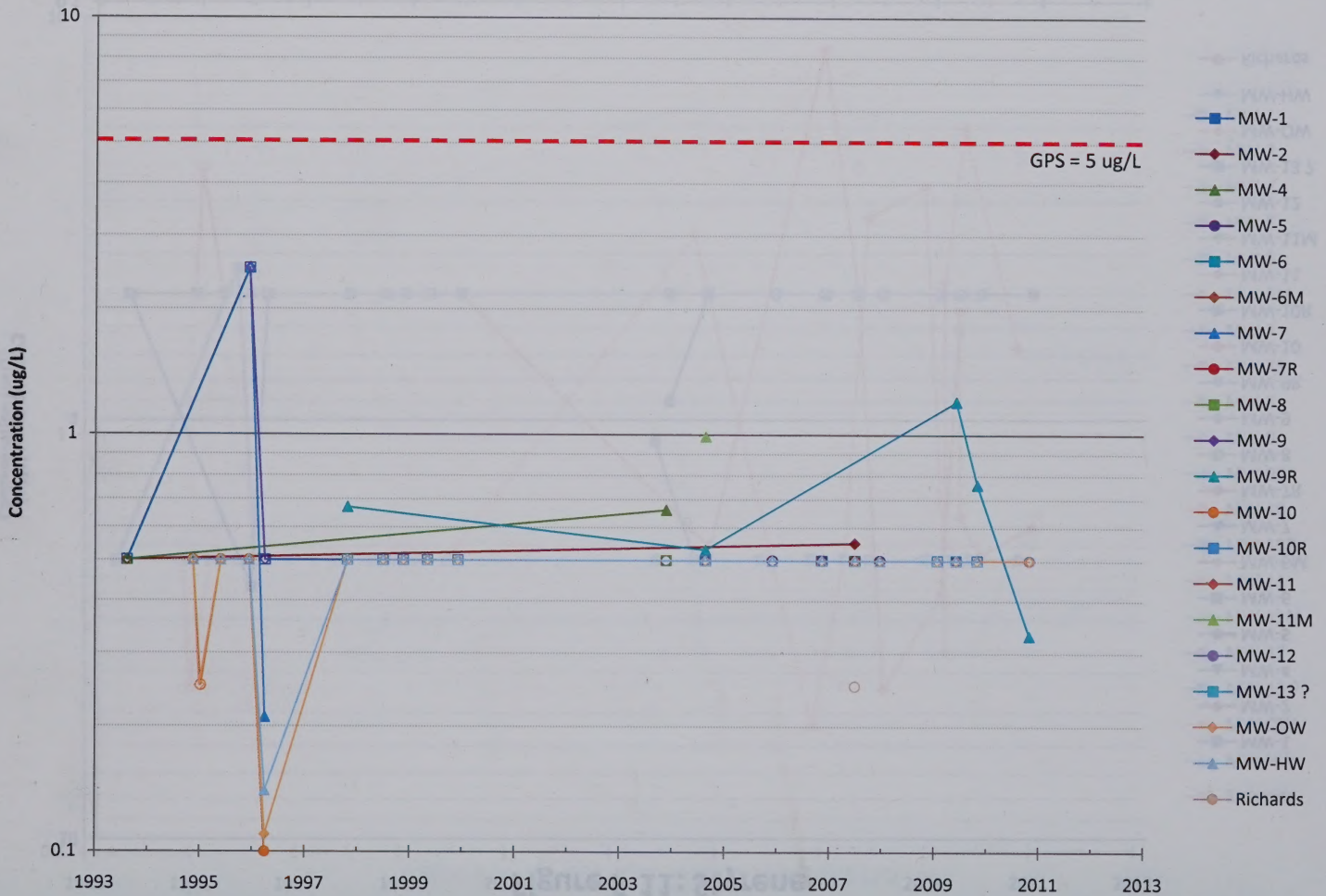


Figure F-13: Vinyl chloride



Figure E-14: Total Xylenes

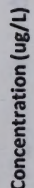


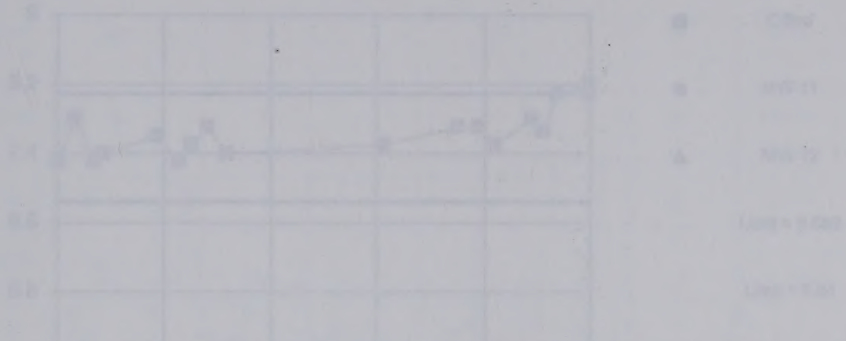
Figure G-1: Prediction Limit Analysis for pH in Deep Wells

10/10/2014 10:00:00 AM

Executive Summary: Office: MW-11, MW-12

Prediction Limit

Statistical Parameters



APPENDIX G: RESULTS OF STATISTICAL ANALYSES

Background Data Summary: Mean = 7.082, Std. Dev. = 0.001, n = 18. Assumptions: Shapiro-Wilk Statistic = 0.98, p-value = 0.981, Levene Statistic = 0.001, p-value = 0.981. Regression equation: $y = 0.001x + 7.082$. The graph displays the pH values for three wells (MW-11, MW-12, and MW-13) over time, with the prediction limits (L95 = 7.082, L99 = 7.001) shown as horizontal lines.

Figure G-2: Prediction Limit Analysis for Conductivity in Deep Wells

10/10/2014 10:00:00 AM

Executive Summary:

Prediction Limit

Statistical Parameters

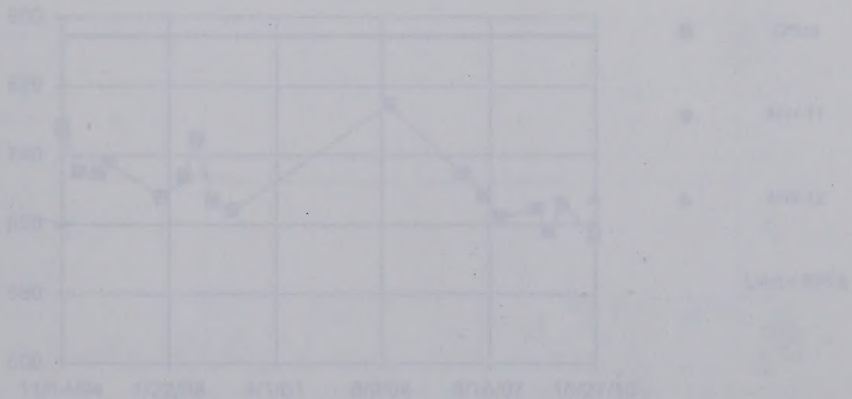


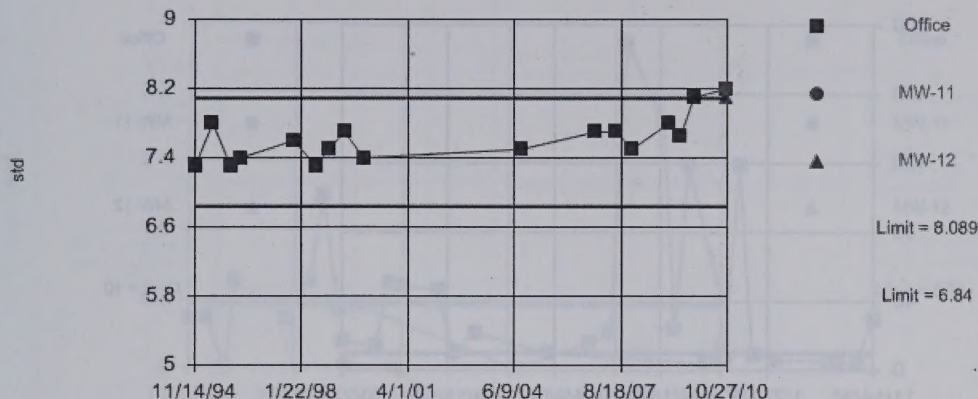
Figure G-1: Prediction Limit Analysis for pH in Deep Wells

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Exceeds Limits: Office, MW-11, MW-12

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.464, Std. Dev.=0.2289, n=18. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9612, critical = 0.897. Report alpha = 0.05. Individual comparison alpha = 0.008333. Most recent point for each compliance well compared to limit.

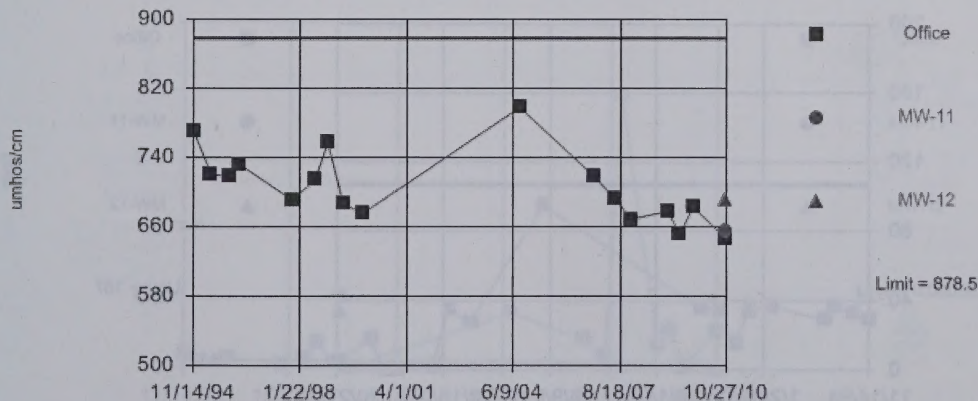
Figure G-2: Prediction Limit Analysis for Conductivity in Deep Wells

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Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=765.3, Std. Dev.=47.57, n=18. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9681, critical = 0.897. Report alpha = 0.05. Individual comparison alpha = 0.01667. Most recent point for each compliance well compared to limit.

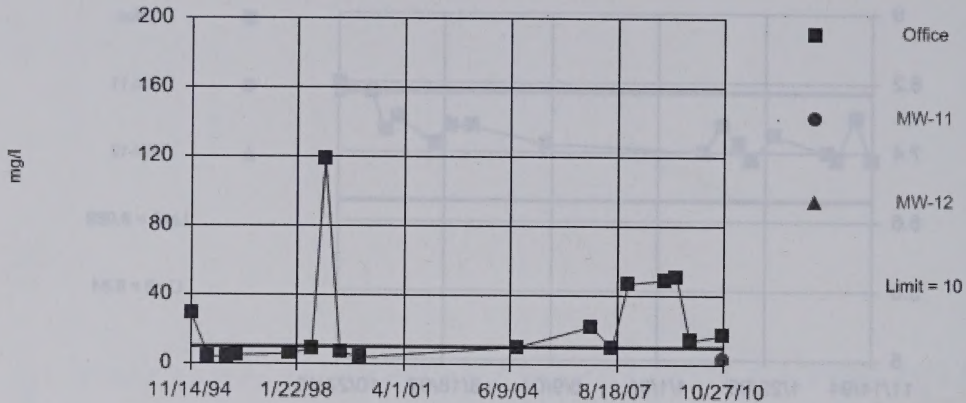
Figure G-3: Prediction Limit Analysis for Chloride in Deep Wells

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Exceeds Limit: Office

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 18 background values Report alpha = 0.1429. Individual comparison alpha = 0.05009. Most recent point for each compliance well compared to limit.

Figure G-4: Prediction Limit Analysis for Sulfate in Deep Wells

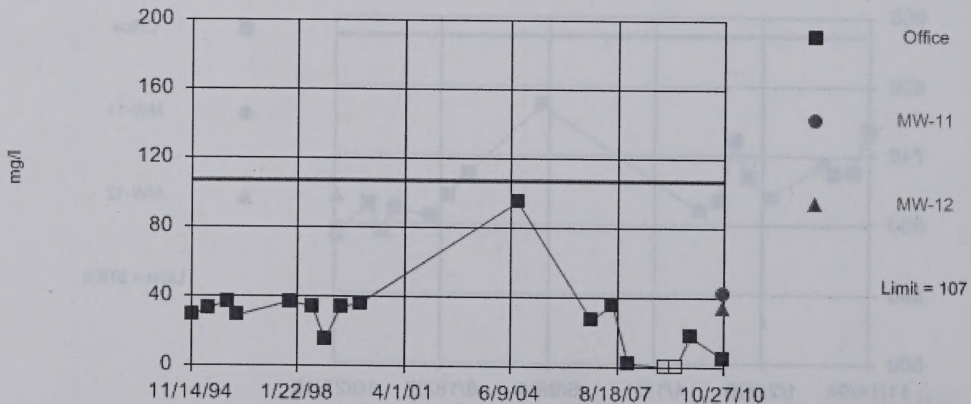
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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric

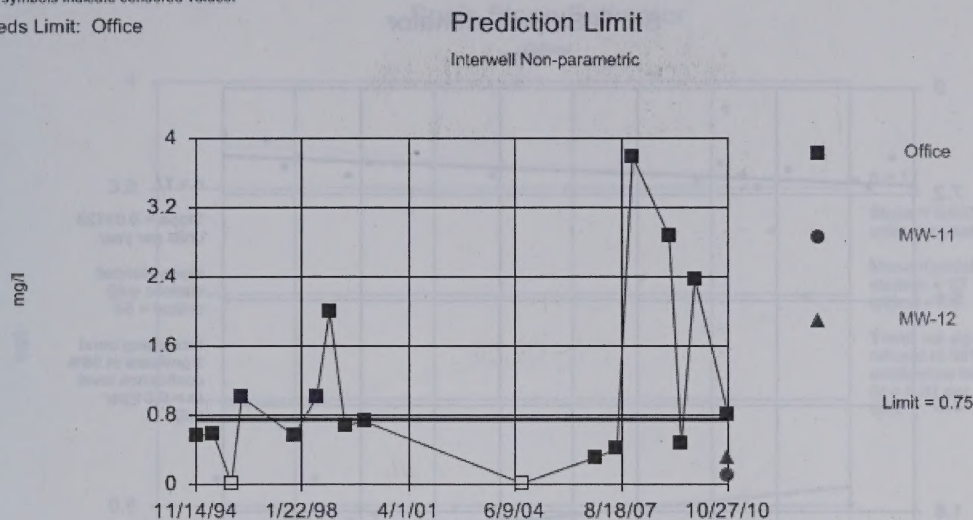


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 18 background values Report alpha = 0.1429. Individual comparison alpha = 0.05009. Most recent point for each compliance well compared to limit.

Figure G-5: Prediction Limit Analysis for Iron in Deep Wells

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Hollow symbols indicate censored values.

Exceeds Limit: Office

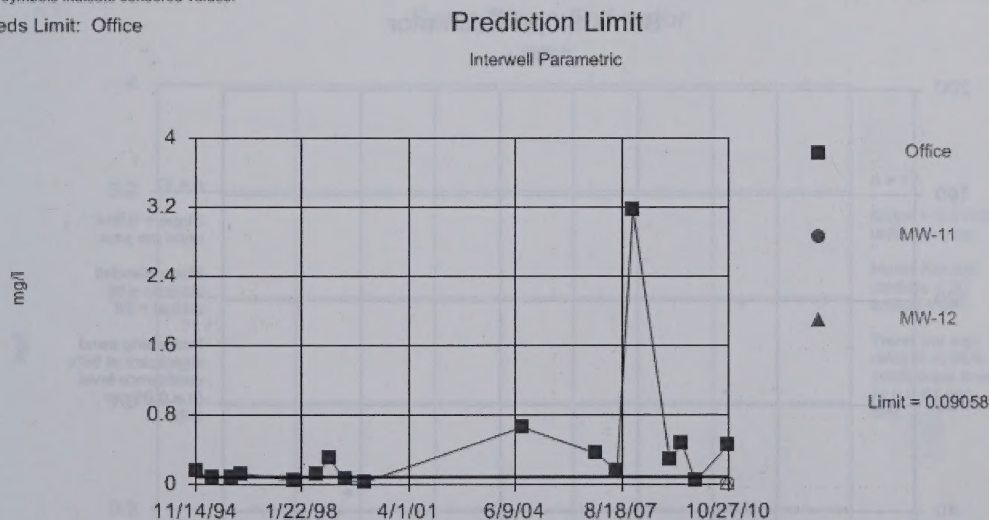


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 18 background values. 61.11% NDs Report alpha = 0.1429. Individual comparison alpha = 0.05009. Most recent point for each compliance well compared to limit.

Figure G-6: Prediction Limit Analysis for Zinc in Deep Wells

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Hollow symbols indicate censored values.

Exceeds Limit: Office



Background Data Summary (based on square root transformation): Mean=0.178, Std. Dev.=0.05167, n=18, 5.556% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9269, critical = 0.897. Report alpha = 0.05. Individual comparison alpha = 0.01667. Most recent point for each compliance well compared to limit.

Figure G-7: Trend Analysis for pH in MW-OW

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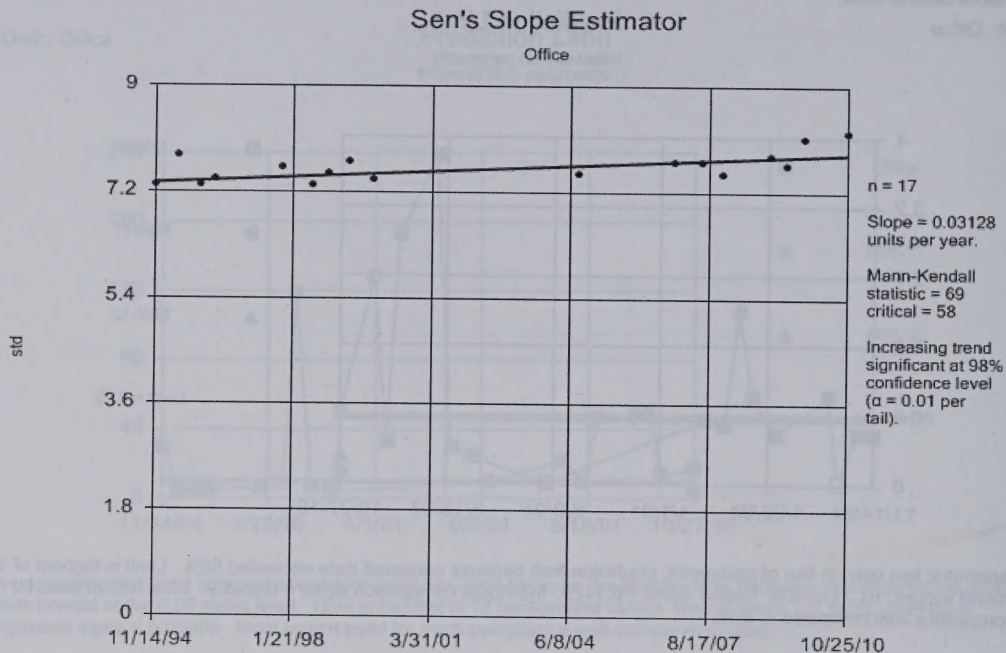


Figure G-8: Trend Analysis for Chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

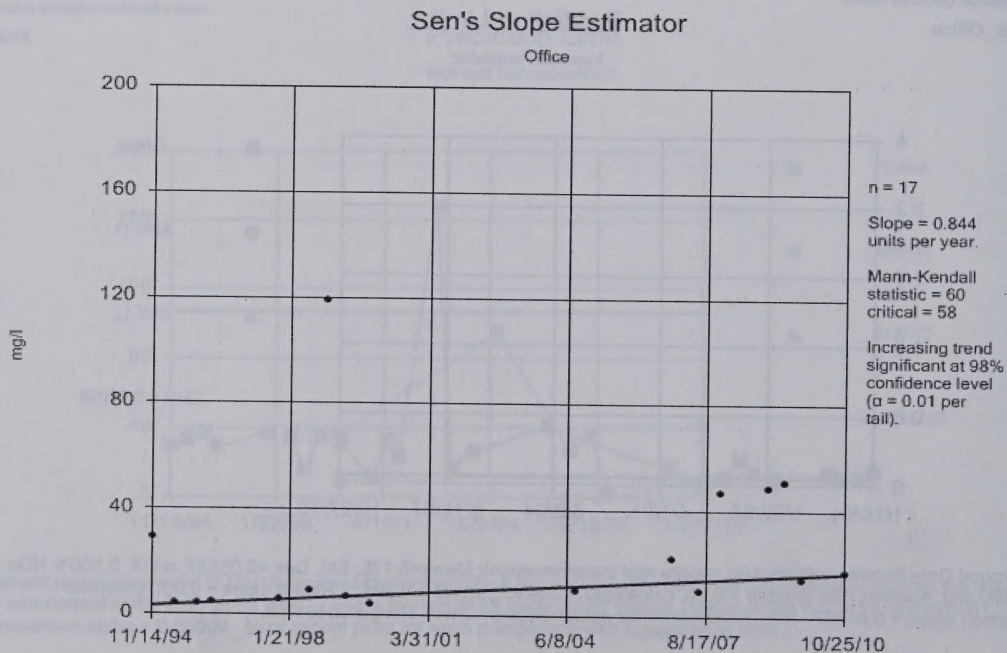




Figure G-11: Trend Analysis for pH in MW-9R

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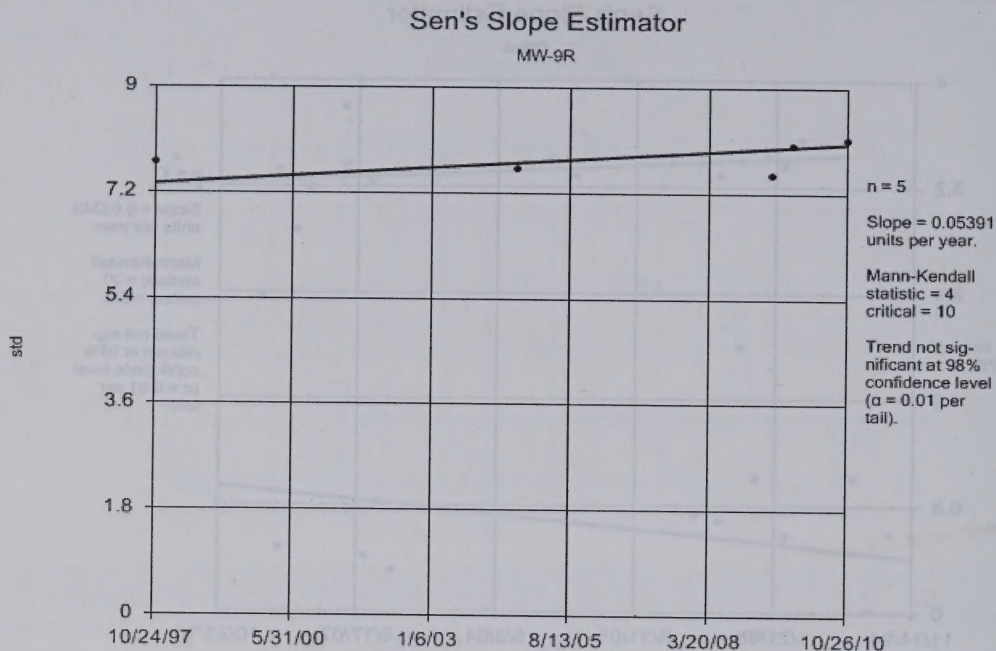


Figure G-12: Trend Analysis for Conductivity in MW-9R

v.9.0.34 For regulatory purposes only. EPA

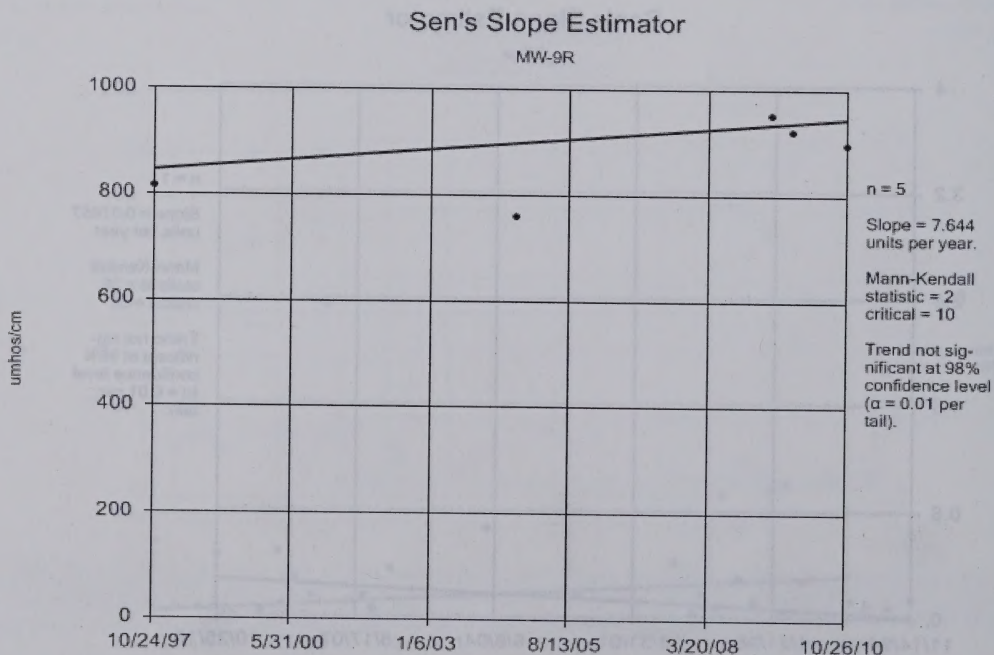


Figure G-13: Trend Analysis for Chloride in MW-9R

v.9.0.34 For regulatory purposes only. EPA

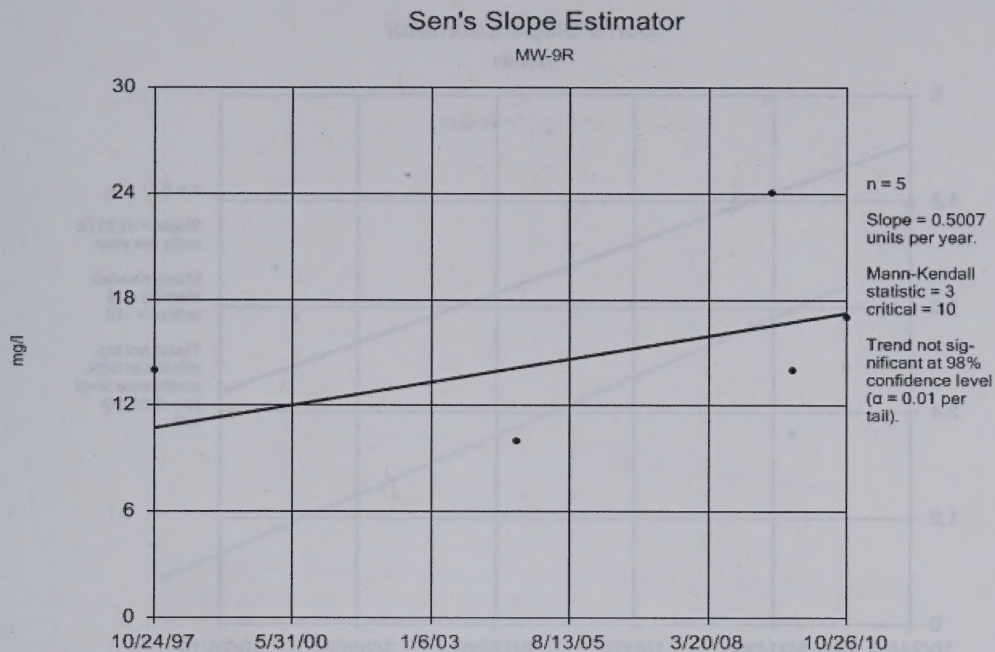


Figure G-14: Trend Analysis for Sulfate in MW-9R

v.9.0.34 For regulatory purposes only. EPA

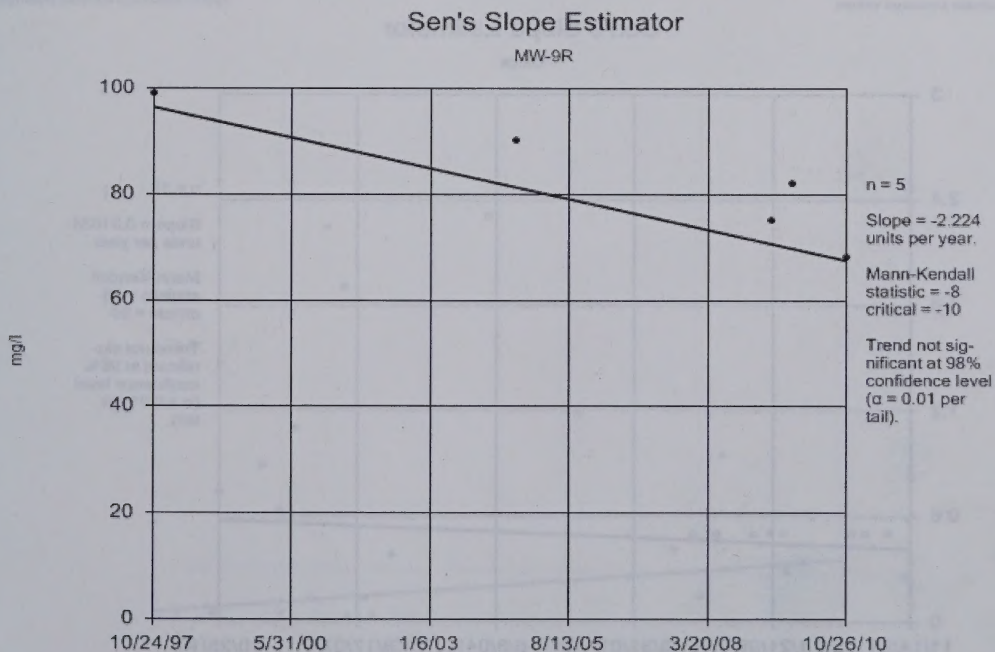


Figure G-15: Trend Analysis for Nitrate + Nitrite in MW-9R

v.9.0.34 For regulatory purposes only. EPA

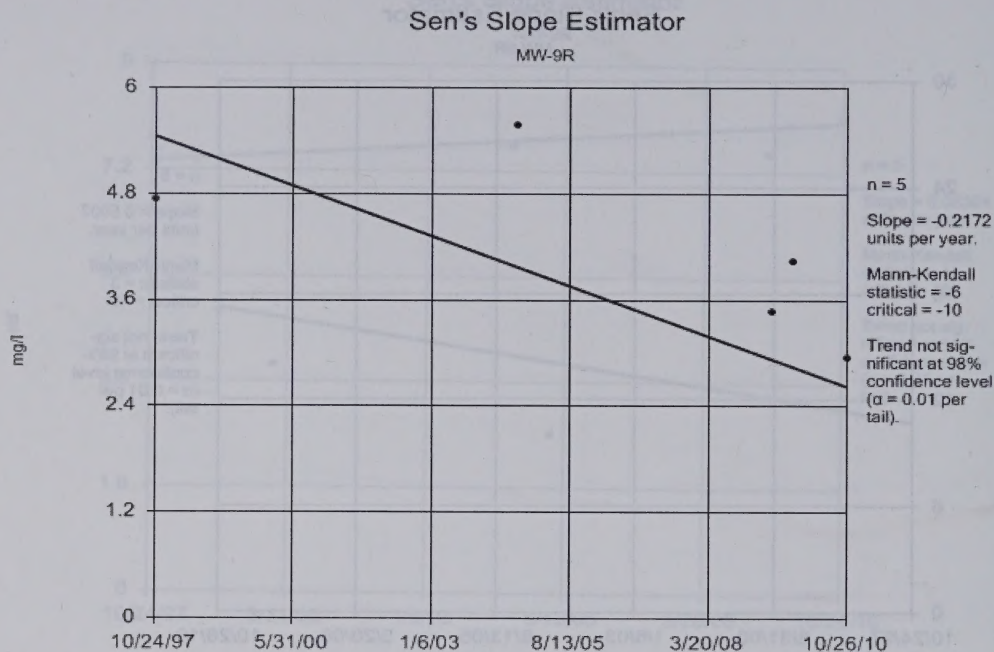


Figure G-16: Trend Analysis for Benzene in MW-OW

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Hollow symbols indicate censored values.

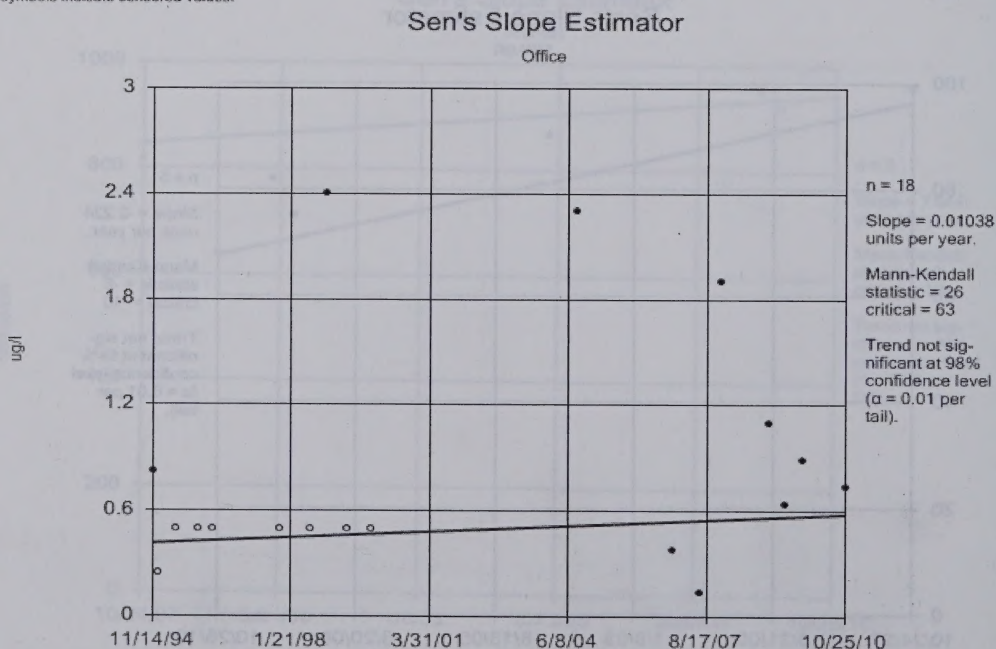


Figure G-17: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

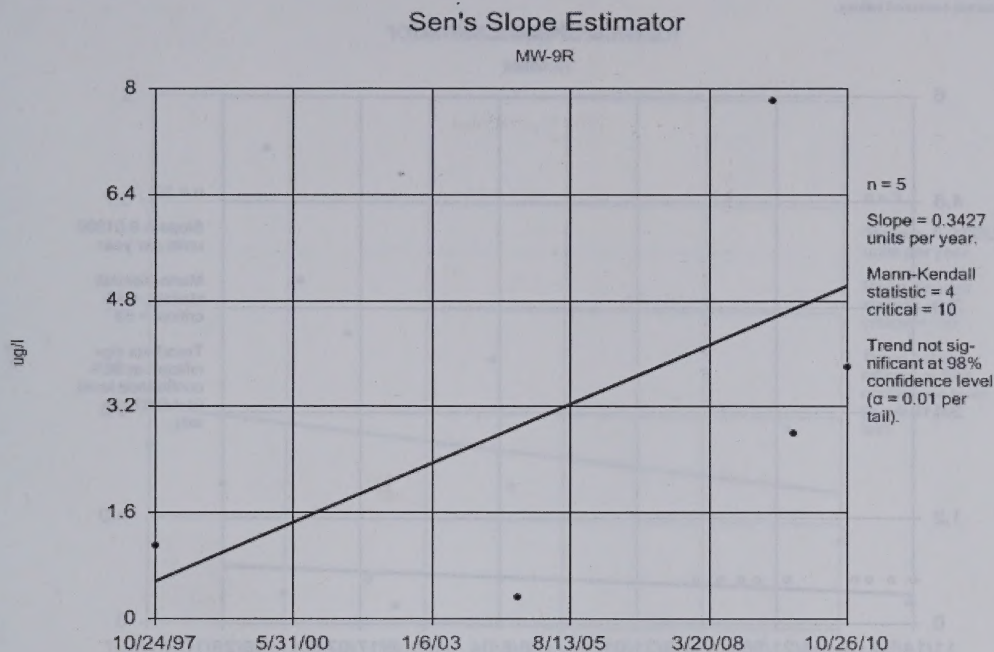


Figure G-18: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

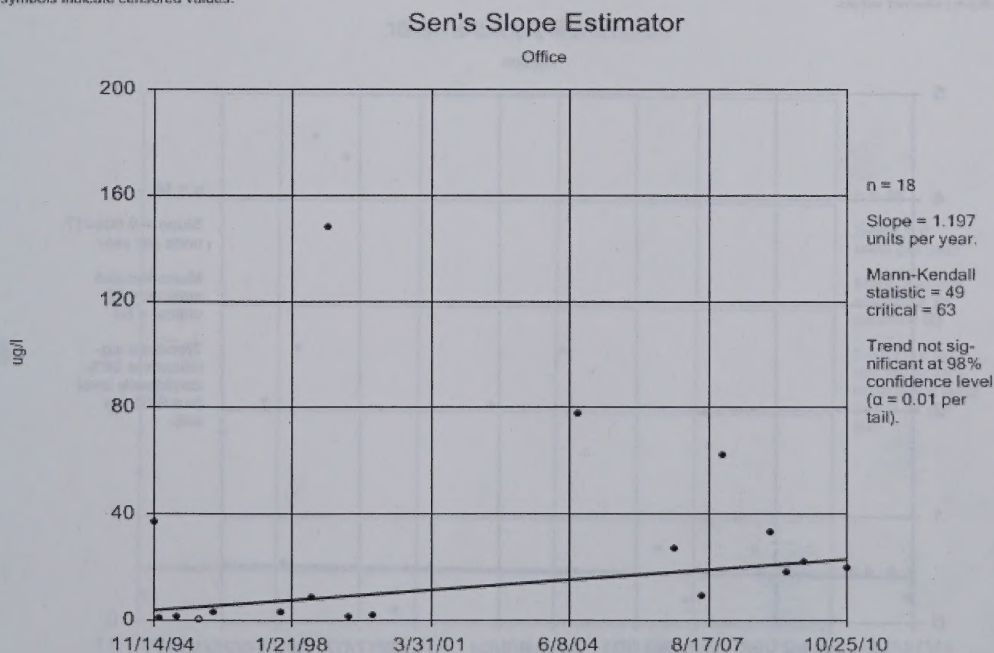


Figure G-19: Trend Analysis for Ethylbenzene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

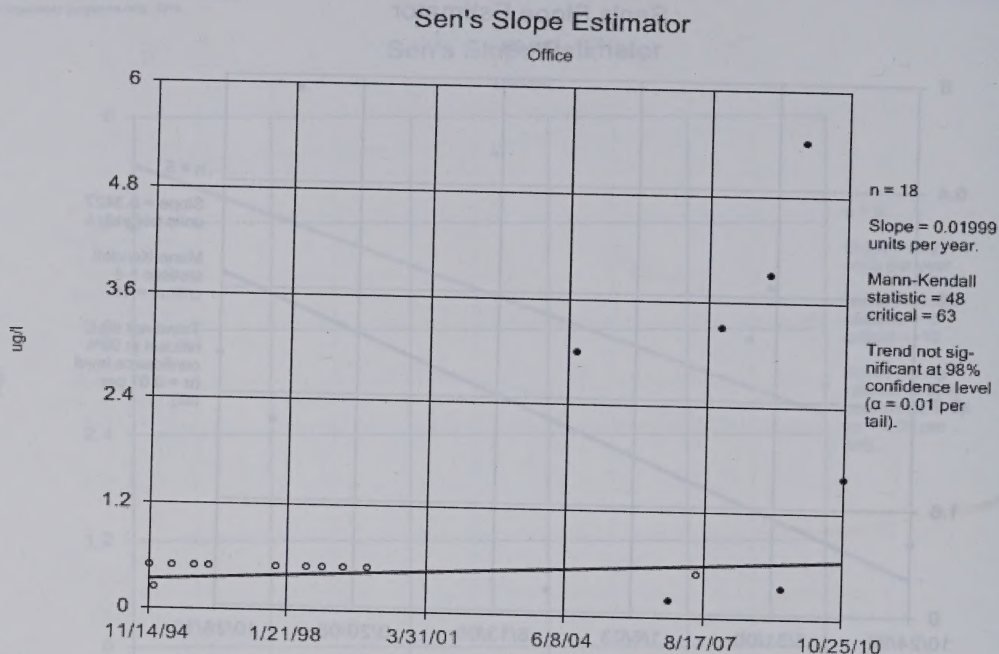


Figure G-20: Trend Analysis for Styrene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

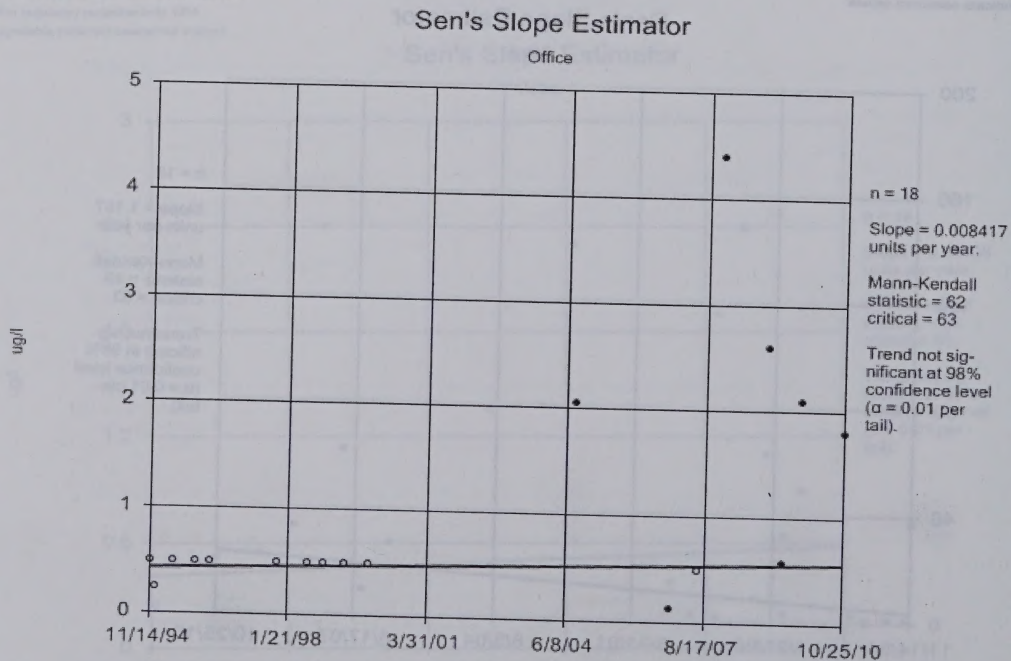


Figure G-21: Trend Analysis for Tetrachloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

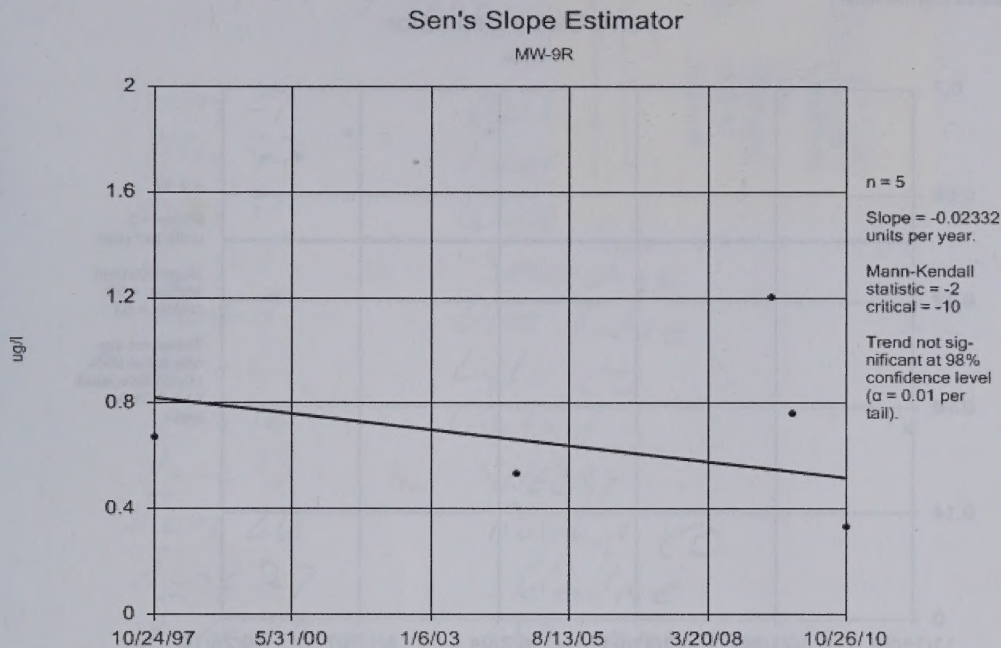


Figure G-22: Trend Analysis for Vinyl chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

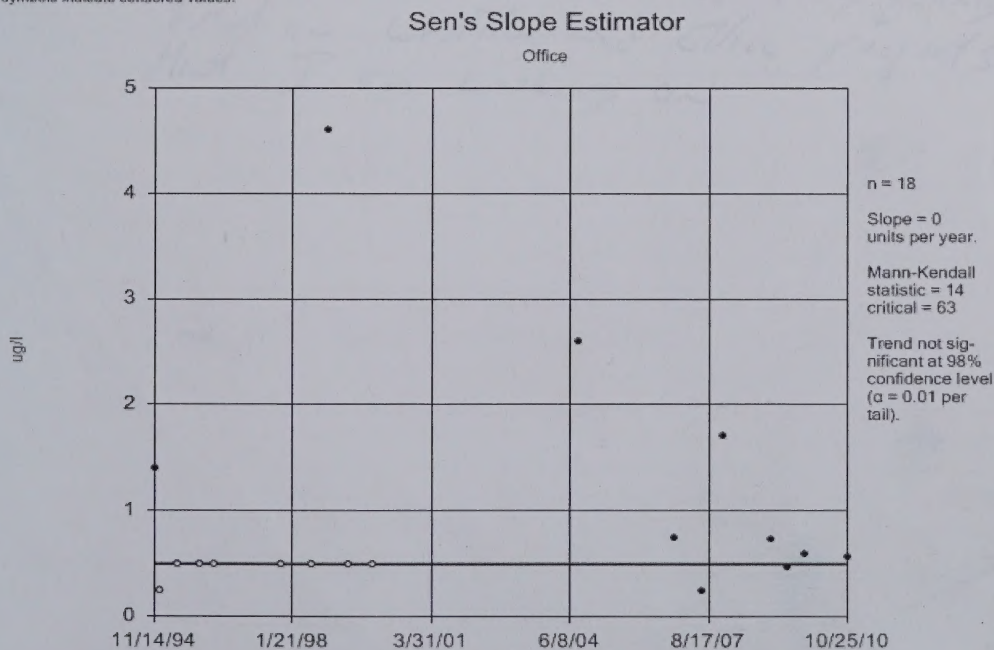
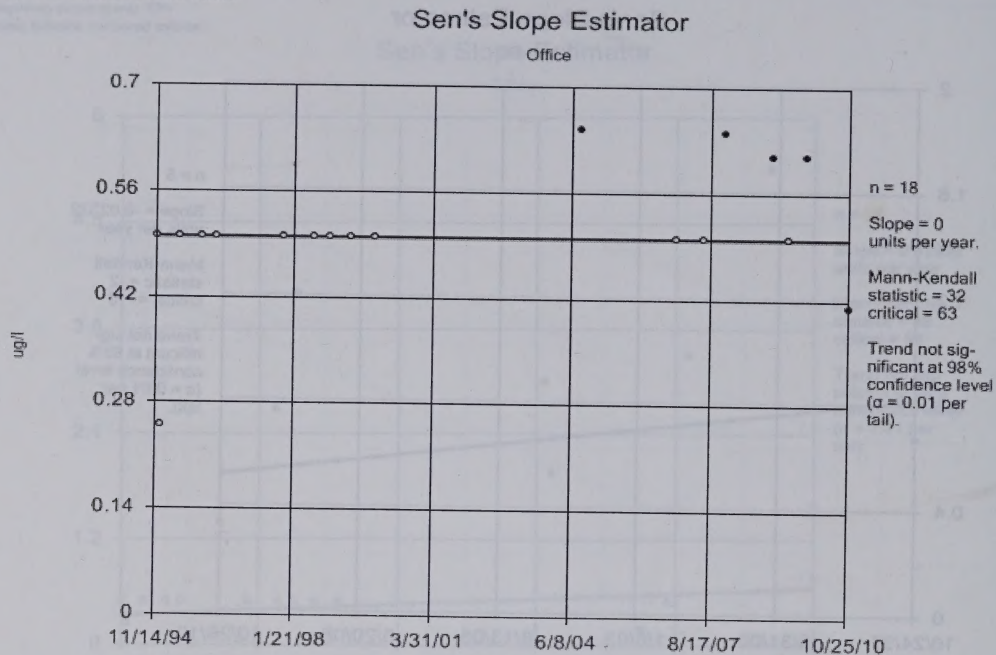


Figure G-23: Trend Analysis for Total Xylenes in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.



Closed

County Fergus
Facility & # Sanitation Inc #291
Closure Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run-on
Inspections
Other: _____

DRAFT MONITORING SCHEDULE FOR BARRY DAMSCHEN

MAY 29	Matta
MAY 30	Deerds CO
MAY 31	Wolf PT
JUNE 1	San Jac
JUNE 5	Dark Lodge
JUNE 6	Lake CO
JUNE 12	Uniford
JUNE 13	SHELBY
JUNE 26	Rosebud CO
JUNE 27	Glendene
JUNE 28	SHANIDAL CO

This schedule can change very quickly
based on weather and other projects
that I am working on

Methane Monitoring Form

Site Name: Master M Landfill Date: 2/14/11

Personnel: Martin Van Oort

Field Conditions: Partly cloudy, 40's

Meter Model: 6F6 6450

Calibration 2/14/11
Time: 751 Standard: 50% LEL Pre-Reading: — Post-Reading: 50.5

[illegible]

Notes: South Vent buried under snow

Signature: W. B. (S)

Page 1 of 1

21352
Frog-S #291
6W Mon.

BARRY DAMSCHEN CONSULTING, LLC

P.O. Box 51210
Billings, MT 59105

Phone (406)461-5003
Fax (406)534-2621

FAX COVER

Date: 5-31-10

To: Martin Um Out

Fax No: 444- 1374

From: BAM

Total Pages Including Cover: 2

Here is my tentative schedule monitoring
Schedule:

Colship (Rashed CO)	June 7
blaine	June 8
sherman	June 9
Daniels & Wolf PT	June 10
<u>San Jose</u> & MALTA	<u>June 14</u>
un.frod	June 15
Don Lodge	June 22
Lake CO.	June 23
Shelby	June 24

Closed

County Forges

Facility & # Sanitation Inc #291

Closure

Landfarm

Finan Assur

Liner

GW Corr Meas

Methane

GW Monitoring

O & M

GW Reports

Run-on

Inspections

Other: _____



September 16, 2009

Barry Damschen
Damschen Consulting
5531 York Road
Helena, MT 59602

Dear Barry:

It is my understanding that you are requesting results for samples submitted on June 25th for the Sanitation Inc Landfill project.

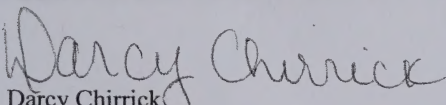
Unfortunately, at this time, I am unable to release any results on this account. Our terms for payment are NET 30 days. According to my records, Energy Laboratories, Inc. has not received payment for samples submitted in June of 2008 and June of 2009.

When full payment is received on the account of \$4,019.75 results will be released. A current statement of account is attached.

Thank you for your understanding.

Sincerely,

ENERGY LABORATORIES, INC.


Darcy Chirrick
Accounts Receivable

DC/dc


RECEIVED

SEP 24 2009

Dept. of Env
Waste & Unc
Tank Man gotten

September 16, 2009

Harry Demasch
Demasch Consulting
6331 York Road
Hoboken, NJ 07030

Dear Harry,
It is my understanding that you are requesting results for samples submitted on June 2, 2009. I am unable to release any results on this account. Our terms for payment are 15 days. According to my records, Energy Laboratories, Inc. has not received payment for samples submitted in June of 2008 and June of 2009. When full payment is received on the account of \$4,019.75 results will be released. A current statement of account is attached.

Thank you for your understanding.

Sincerely,

ENERGY LABORATORIES, INC.

Darcy Christie
Darcy Christie
Accounts Receivable

DKC

SEP 24 2009

REC-1

STATEMENT OF ACCOUNT

Page 1

Statement Date	Account No.
09/16/09	B10190

Bill To :

Sanitation Inc
 PO Box 882
 Lewistown, MT 59457

VISA and Mastercard accepted for your convenience.

Transaction Date	Invoice Number	Description	Amount	Balance
07/02/08	280750111		2009.75	2009.75
07/07/09	290750325		2010.00	2010.00
Below 31	Over 30	Over 60	Over 90	Over 120
0.00	0.00	2010.00	0.00	2009.75
				Total
				4019.75

Please detach and return with payment

Sanitation Inc
 PO Box 882
 Lewistown, MT 59457

Amount Enclosed

Remit To:

ENERGY LABORATORIES, INC.
 PO Box 30975
 Billings, MT 59107-0975

Statement Date	Account No.	
09/16/09	B10190	
Invoice No.	Balance	X
280750111	2009.75	
290750325	2010.00	

County Closed Fergus
Facility & # Sanitation Inc #291
Closure Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run-on
Inspections
Other: _____

BARRY DAMSCHEN'S SAMPLING SCHEDULE (Tentative)

Here is my tentative schedule. It could change on a day to day notice depending on weather and other possible conflicts.

June 22	Sanitation Inc.
June 23	Daniels County
June 24	Wolf Point
June 26	Malta
June 30	Shelby
July 1	Unified
July 9, 10 or 13	Beaverhead County

If you plan on attending any of these, please check with me (461-5003) to see if anything has changed.

RECEIVED**JUN 17 2009**

Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

